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THE AMERICAN ECONOMIC REVIEW

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PAPERS AND PROCEEDINGS

OF THE

Seventy-second Annual Meeting

OF THE

AMERICAN ECONOMIC ASSOCIATION

Washington, D.C., December 28-30, 1959

Edited by James Washington Bell, Secretary of the Association and

Gertrude Tait, Executive Assistant

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PROGRAM OF THE SEVENTY-SECOND ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION

Washington, D.C., December 28-30, 1959

The sessions are focused on the broad problem of improving the performance of the American economy. They deal with some basic issues of economic philosophy and policy, with problems surrounding the major objectives of our nation's economic policy, with means of improvement in specific areas of the economy, and with some research in process -which it may be expected will eventually benefit our economy.

In developing the program the President was greatly aided by G. J. Stigler and J. L. Fisher. He also wishes to acknowledge the assistance of other members of the Association, among them M. Abramovitz, G. L. Bach, G. S. Becker, R. M. Cyert, C. L. Dearing, M. Friedman, R. F. Mikesell, G. H. Moore, T. W. Schultz, C. Shoup, and W. L. Thorp.

Sunday, December 27, 1959

6:00 P.M.

Executive Committee Dinner Meeting

Monday, December 28, 1959

9:30 A.M.

Standards for the Performance of our Economic System

Chairman: FRANK H. KNIGHT, University of Chicago

Papers: Donald J. Dewey, Duke University; Tibor Scitovsky, University of California,

Discussants: VINCENT W. BLADEN, University of Toronto; KENNETH E. BOULDING, University of Michigan; HENRY M. OLIVER, Indiana University

Reducing Impediments to Foreign Trade

Chairman: HOWARD S. PIQUET, Library of Congress

Papers: Walter S. Salant, Brookings Institution; Willard L. Thorp, Amherst College; John J. Deutsch, Queen's University, Ontario

Discussants: Daniel Marx, Jr., Dartmouth College; Ingvar Svennilson, University of Stockholm; JAY W. WILEY, Purdue University

Problem of Achieving and Maintaining a Stable Price Level (Joint session with Econometric Society)

Chairman: G. L. BACH, Carnegie Institute of Technology

Papers: Paul A. Samuelson and Robert M. Solow, Massachusetts Institute of Technology; LLOYD G. REYNOLDS, Yale University; ARTHUR W. MARGET, Board of Governors of the Federal Reserve System

Discussants: Lester V. Chandler, Princeton University; Abba Lerner, Michigan State University; Joseph A. Pechman, Committee for Economic Development

12:30 P.M.

Ioint Luncheon with the American Statistical Association1

Chairman: MARTIN R. GAINSBRUGH, National Industrial Conference Board

Speakers: PAUL W. McCracken, University of Michigan; Donald F. Heatherington, National Foreign Trade Council

Improving the Unemployment Insurance System (Joint session with the Industrial Relations Research Association)2

Chairman: J. Douglas Brown, Princeton University

Paper: HERMAN M. SOMERS, Haverford College

Discussants: Wilbur J. Cohen, University of Michigan; Nelson H. Cruikshank, AFL-CIO; Russell Hibbard, General Motors Corporation; Clark Kerr, University of California; RICHARD A. LESTER, Princeton University

2:30 P.M.

Problem of Raising Incomes in Lagging Sectors of the Economy

Chairman: ALFRED C. NEAL, Committee for Economic Development

Papers: HARVEY S. PERLOFF, Resources for the Future; FRANK J. WELCH, University of Kentucky; Eleanor M. Snyder, Franklin D. Roosevelt Foundation

¹ To be published by the American Statistical Association in the 1959 proceedings of the Business and Economic Statistics Section.

2 To be published in the Proceedings of the Twelfth Annual Meeting of the IRRA.

Discussants: George H. Borts, Brown University; George E. Brandow, Pennsylvania State University; VICTOR ROTERUS, U.S. Department of Commerce

Research on Economic Development (Joint session with the American Statistical Asso-

Chairman: Max F. MILLIKAN, Massachusetts Institute of Technology

Papers: EVERETT E. HAGEN, Massachusetts Institute of Technology; WILLIAM H. NICH-OLLS, Vanderbilt University; EDWARD S. MASON, Harvard University; RICHARD S. ECKAUS, Brandeis University; HOLLIS B. CHENERY, Stanford University Discussant: Albert Hirschman, Columbia University

8:00 P.M.

Presidential Address^a

Chairman: JOHN M. CLARK, Columbia University Address: ARTHUR F. BURNS, Columbia University

Tuesday, December 29, 1959

9:30 A.M.

Incentives and Economic Growth: Changing Roles and Public Policies

Chairman: Solomon Fabricant, New York University

Papers: Armen A. Alchian, University of California, Los Angeles, and William H. MECKLING, RAND Corporation; GREGORY GROSSMAN, University of California, Berkeley; Simon Rottenberg, University of Chicago

Discussants: Joseph S. Berliner, Syracuse University; Benjamin Higgins, University of Texas; Herbert Stein, Committee for Economic Development

Problem of Social Priorities

Chairman: JOSEPH L. FISHER, Resources for the Future

Papers: ARTHUR SMITHIES, Harvard University; Joe S. Bain, University of California,

Berkeley; Leo Grebler, University of California, Los Angeles Discussants: Samuel M. Cohn, Bureau of the Budget; Otto Eckstein, Harvard University; NEAL J. HARDY, National Housing Center

Research on Income, Consumption, and Savings (Joint session with the American Statistical Association)

Chairman: Milton Friedman, University of Chicago

Papers: Arnold Zellner, University of Washington; Jacob Mincer, City College of
New York; Robert C. Jones, University of Pennsylvania; John A. Brittain, Vanderbilt University; F. Thomas Juster, National Bureau of Economic Research Discussant: MARC NERLOVE, University of Minnesota

12:30 P.M.

Joint Luncheon with American Finance Association4

Chairman: JAMES J. O'LEARY, Life Insurance Association of America Speaker: Robert B. Anderson, Secretary of the Treasury

2:30 P.M.

Problem of Achieving and Maintaining a High Rate of Economic Growth

Chairman: Moses Abramovitz, Stanford University
Papers: William J. Fellner, Yale University; W. W. Rostow, Massachusetts Institute

Discussants: Paul A. Baran, Stanford University; Per Goran Ohlin, Columbia University; Rutledge Vining, University of Virginia

Facilitating Movements of Labor Out of Agriculture (Joint session with the American Farm Economic Association)

Chairman: THEODORE W. SCHULTZ, University of Chicago

Papers: Dale E. Hathaway, Michigan State University; James G. Maddox, North Carolina State College; D. Gale Johnson, University of Chicago

Discussants: Earl O. Heady, Iowa State University; Melvin W. Reder, Stanford University; George P. Shultz, University of Chicago

Research on Theory of the Firm (Joint session with the American Statistical Association) Chairman: RICHARD M. CYERT, Carnegie Institute of Technology

Papers: Julius Margolis, University of California, Berkeley; Kalman Cohen, Carnegie Institute of Technology; Jacob Marschak, Yale University; Thomson Whitin, Massachusetts Institute of Technology; Martin Shubik, General Electric Company

Discussant: MICHAEL J. FARRELL, Cambridge University

⁴ To be published by the American Finance Association.

³ Published in the March, 1960, issue of the American Economic Review.

4:00 P.M.

Appraising the Role of Money in the Economy (Joint session with the Econometric Society)

Chairman: ALAIN C. ENTHOVEN, RAND Corporation

Papers: MARTIN BRONFENBRENNER, University of Minnesota; PHILLIP CAGAN, Brown University; KARL BRUNNER, University of California, Los Angeles

Discussants: JOHN G. GURLEY, Brookings Institution; JOHN H. KAREKEN, University of Minnesota

8:00 P.M.

Problem of International Harmony: Economic Policies for a Lasting Peace

Chairman: Gardner Patterson, Princeton University
Papers: RAYMOND F. MIKESELL, University of Oregon; Jack N. Behrman, University of Delaware; PAUL MEEK, Federal Reserve Bank of New York

Discussants: ARTHUR BLOOMFIELD, University of Pennsylvania; EMILIO G. COLLADO. Standard Oil Company (N.J.); J. RICHARD HUBER, University of Washington Problem of Achieving and Maintaining Full Employment

Chairman: Geoffrey H. Moore, National Bureau of Economic Research

Papers: Edwin G. Nourse, Joint Council on Economic Education; Clarence D. Long, Johns Hopkins University; Isador Lubin, Rutgers University

Discussants: Gottfried Haberler, Harvard University; Jacob J. Kaufman, Pennsylvania State University; Ruth P. Mack, Office of the Mayor, City of New York

Improving the Efficiency of the Transportation and Utilities Systems

Chairman: CHARLES L. DEARING, Illinois State Toll Highway Commission

Papers: James C. Nelson, Washington State University; Alfred E. Kahn, Cornell University

Discussants: Burton N. Behling, American Association of Railroads; Robert W. HARBESON, University of Illinois; RICHARD B. HEFLEBOWER, Northwestern University

Wednesday, December 30, 1959 9:30 A.M.

Investing in Education and Research

Chairman: Simon Kuznets, Johns Hopkins University

Papers: IRVING H. SIEGEL, Council of Economic Advisers; Gary S. Becker, Columbia University; Dexter M. Keezer, McGraw-Hill Publishing Company Discussants: Roger A. Freeman, Institute for Social Science Research; Burton H. Klein, RAND Corporation; Henry H. Villard, City College of New York

Research on Productivity, Wages, and Prices (Joint session with American Statistical Association)1

Chairman: GERHARD COLM, National Planning Association

Papers: Ted Anderson, University of California, Los Angeles; Joseph W. Garbarino, Cornell University; William R. Belmont, University of North Dakota Discussants: Walter Fackler, U.S. Chamber of Commerce; Nathaniel Goldfinger,

AFL-CIO; CHARLES SCHULTZE, Indiana University

2:30 P.M.

Reforming the Tax System

Chairman: Louis Shere, Indiana University

Papers: Carl S. Shoup, Columbia University; Dan Throop Smith, Harvard University Discussants: Carman G. Blough, American Institute of Certified Public Accountants; Richard B. Goode, Brookings Institution; Richard A. Musgrave, Johns Hopkins University

Relations Between Economic Theory and Economic Policy

Chairman: Morris A. Copeland, Cornell University

Papers: CLAIR WILCOX, Swarthmore College; George J. Stigler, University of Chicago Discussants: PAUL T. HOMAN, Southern Methodist University; FRITZ MACHLUP, Johns Hopkins University; JOSEPH J. SPENGLER, Duke University

5:00 P.M.

Business Meeting

6:00 P.M.

Executive Committee Dinner Meeting

 $^{^5}$ For abstracts of these papers, refer to $\it Econometrica, forthcoming. <math display="inline">^6$ No manuscript received.

HE purpose of the American Economic Association, according to its charter, is the encouragement of economic research, the issue of publications on economic subjects, and the encouragement of perfect freedom of economic discussion. The Association as such takes no partisan attitude, nor does it commit its members to any position on practical economic questions. It is the organ of no party, sect, or institution. Persons of all shades of economic opinion are found among its members, and widely different issues are given a hearing in its annual meetings and through its publications. The Association, therefore, assumes no responsibility for the opinions expressed by those who participate in its meetings. Needless to say, the papers presented are the personal opinions of the authors and do not commit the organizations or institutions with which they are associated.

JAMES WASHINGTON BELL Secretary



CHANGING STANDARDS OF ECONOMIC PERFORMANCE

By Donald J. Dewey Duke University

The many admirers of Professor Knight will know that he has often expressed doubts about the capacity of individuals to conduct their political affairs with prudence and decency. He has, however, allowed one saving grace to the human race. History may indeed be a register of the crimes, follies, and misfortunes of mankind. Nevertheless, people still manage to behave more intelligently than they talk. This gulf between action and talk is probably nowhere greater than in matters of economic policy; and this gulf exists because action is not the only end of discussion. Talk about economic issues certainly has some entertainment value; and we may also suppose that, as practiced before Congressional committees, it serves as a form of group psychotherapy.

In any event, the gulf between what is said and what is done greatly complicates the task of tracing changes in standards of economic performance. One could easily construct a lively—not to say lurid—paper on changing goals of economic policy from the writings of statesmen, economists, churchmen, and political prisoners. A paper so fashioned would reveal sharp conflicts of opinion in every age and striking changes in outlook from one generation to the next.

If one sought to infer the standards of economic performance from the day-to-day activities of legislators, civil servants, and judges, the result would be very different. Such an exercise would, I think, show that the goals of economic policy change slowly; and that, in most eras, there is far more consensus on goals than the rhetoric of contemporary controversy would indicate. But the standards of economic performance implicit in legislation—or the lack of it—do change. And without attention to the untrustworthy language of debates, the sources of change are difficult to detect and explain.

Political Economy as a Moral Commitment

Most of us will agree that widespread concern for standards of economic performance is of recent origin as historians measure time; that, at most times and places, economic issues have excited little interest. For in the society that is both rural and poor—the representative

society of history—the material condition of most humans is so closely tied to rainfall, pestilence, crop diseases, and their power to placate evil spirits that economic issues hardly exist. Aside from maintaining peace and order, surpressing heresy, and limiting its own expenditure, the state can do little for the prosperity of its subjects—and they know it. In such a society, the economic issues that excite concern are generally bound up with the law of land tenure. Indeed, most of the social protest literature of history reduces to a simple demand that landlords be killed, expropriated, or put to work.

As subsistence farming gave way to more elaborate divisions of labor, astute observers saw that production and exchange could be helped or hindered by legislation; and hence that social arrangements resting upon law could be—and should be—weighed for their effects upon economic performance. This realization, which became so eloquent and explicit in the eighteenth century, both created political economy as a serious study and gave it the distinctive moral flavor that it still retains.

From the Wealth of Nations onward, economists—notwithstanding all pretension to objectivity—have never doubted that laws are good if they promote efficiency and progress and bad if they thwart it. As a group, we have allowed our zeal for verbal or mathematical precision to involve us in sharp controversy; but we have never doubted that, properly defined, efficiency and progress are the right goals of policy.

The view of the world which underlies this devotion is worth a brief description because, more than anything else, it bedevils our relations with our fellow men. The concern for efficiency and progress is—and always has been—secular in that it condemns all religious restraints that are inimical to higher man-hour productivity. This concern is unromantic in that it will not sacrifice national income in order to maintain a happy peasantry or a culture-carrying leisure class. It is materialistic in that happiness is regarded as a more pressing goal—if not a more worthy goal—than salvation. And above all, it is optimistic in that it supposes that the sum of human happiness is increased by growing wealth.

In short, economists were utilitarians before Jeremy Bentham and have remained so ever since. We accept the assumption that individual happiness—or if you prefer, welfare—can be made greater or less by legislation; that general welfare is simply the sum of individual welfares; and that legislation ought to seek increases in the general welfare.

But if economists have always been utilitarians, I believe it fair to say that legislators, judges, and civil servants—the major architects of economic policy—are not now utilitarians. Nor have they ever been. The welfare test of Bentham—the greatest good for the greatest number—is often wrongly dismissed as question-begging rhetoric. Ben-

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tham's test merely supposes a reasonable man's definition of welfare. And while any definition of reasonable behavior is inevitably tautological, it is concrete enough to people who can agree on how a reasonable man will behave in specified situations.

The distinguishing feature of the welfare approach to economic issues is the insistence that they shall not be decided solely, or even mainly, with reference to the interests of the most vocal and active parties—that the interests of the silent and passive also deserve respect. The political leader instinctively rejects this approach because it is the vocal and active who can cause him the most trouble and do him the most good.

To the welfare approach to economic issues, we might oppose arbitration and its close cousin, litigation. In arbitration—and to a lesser degree in litigation—the object is to hammer out a compromise that keeps the peace between aggrieved and articulate parties. Little attention is paid to the interests of other groups. Indeed courts of law have long favored straightforward fights between plaintiff and defendant and discouraged the efforts of third party busybodies to intervene. In arbitration and litigation the neglect of third party interests is considered a virtue since it makes for speed and directs attention to the emotionally loaded issues.

Now the welfare approach to problems is at once the justification for maintaining a leisured class of economists and the reason why our influence is so limited. The welfare approach insures a more careful analysis of policy alternatives than does arbitration or litigation. But the neglect of politics imposed by this perspective means that the advice offered by economists often strikes statesmen as unrealistic and unhelpful. In our hearts we all believe that interpersonal comparisons of welfare are possible and desirable. So do most laymen. But we hold this conviction with such zeal that we would legislate injuries on particular people that are explicit and measurable in the hope of conferring even greater benefits on people in general. These greater benefits, however, are so widely diffused that they inspire neither interest nor gratitude in the recipients. Therefore, our professional willingness to sacrifice the complaining few to help the uncomplaining many strikes most people as unreasonable. For example, the abiding hostility of federal judges to trust busting has nothing to do with the political power of large firms. It simply reflects their belief that the evils of monopoly are not serious enough to warrant hurting hapless workers and stockholders.

For reasons that must be passed here, the critical study of economic issues emerged even more slowly in this country than in Britain. Docile graduate students are sometimes put to read Amasa Walker on currency or Henry Carey on rent, but this I think is pure chauvinism. The im-

pediments to the growth of political economy before the Civil War were many; the most formidable, I believe, was complacency.

With the monumental exception of slavery, no country was ever more satisfied with its property arrangements than the United States before 1860. Not only did we fail to produce any native counterpart of Bentham; the work of his dearest enemy—William Blackstone—was an object of near veneration. Indeed, in early America, there were probably a score of statesmen who had carefully studied the Commentaries for every one who had heard of the Fragment on Government.

After 1865 our indifference to political economy changed rapidly as we made the acquaintance of a sagging price level, strike violence, the Standard Oil Company, and—perhaps most important of all for our education—the insolent railroad conductor. Unhappily, the critical faculty is not developed overnight; and the fervent debates on these issues in the thirty years after the Civil War produced little in the way of good legislation or economic theory. They did, however, crystallize the popular revulsion against the economics of the common law. Alfred Marshall may—or may not—have been correct in maintaining that the improvement of business ethics in recent centuries has been a major source of economic progress. But by the late nineteenth century most people, including American congressmen, had come to expect a higher plane of competition than the courts would, or could, enforce.

Common-law judges, left to their own devices, never progressed beyond the doctrine of disinterested malevolence which was the unambiguous legal equivalent of laissez faire. By this doctrine one merchant could do anything to damage a rival, provided that two rules were observed: he must not commit a crime or tort recognized by Blackstone—murder, arson, libel, etc.—and his motive in inflicting the injury must be his own gain and not a sadistic desire to impoverish or humiliate an opponent. This doctrine survived in the United States until the Sherman Act of 1890, and in Britain, though with many modifications, until the Monopolies Act of 1956.

In the closing years of the last century, the professional economist, who was making his first appearance on the American scene, neither influenced nor sympathized with lay efforts to alleviate the extreme horrors tolerated in the name of disinterested malevolence. Our professional predecessors of this period can be divided into the Anglophiles and the Prussians. The former, educated on the work of English authors, were at once ahead of and behind their time. They applied welfare tests to proposed reforms and so improved upon the Granger atmosphere that pervaded discussion of economic issues. But they clung to a faith in the invisible hand that was already passé in Britain. Inci-

dentally, common-law judges seldom bothered to stress the benefits of disinterested malevolence; rather they usually argued that the ethics of commercial people were so distressingly low that it passed the power of the court to raise them.¹ In this country, Anglophile economists in the nineteenth century stoutly opposed all efforts to improve the plane of competition by restricting freedom of contract. The kicking, biting, and gouging sanctioned by the common law were viewed as the inescapable costs of efficiency and progress.

The American economists who went to Germany returned with no special brief for freedom of contract. They had, however, learned that any effort to use legislation to impede the progress of industrial concentration was a silly, and possibly perverse, flouting of the Zeitgeist.

The opposition of American economists to the statesman's first bumbling attempts to suppress the business barbarities tolerated by the common law ends rather abruptly after 1900. The confidence of the Anglophiles in freedom of contract did not survive the wave of mergers which followed the outlawing of cartels in the Addyston Pipe case.² The Prussians eventually perceived that such personages as James J. Hill, John H. Paterson, and Bet-a-Million Gates were less amenable to reason than Bismarck's tame bourgeoisie. It is also probable that by 1900 American economists had acquired enough self-confidence to acknowledge that, like their fellow citizens, they harbored grudges against Rockefeller and arrogant railroad managements.

Despite popular opposition, the doctrine of disinterested malevolence had its life prolonged in the nineteenth century by conservative judges, a primitive civil service, and muddled thinking in the legislature. From 1900 through 1929, the businessman's freedom of action was increasingly restricted by legislation. So far as I can see, the restrictions were mostly aimed at protecting workers of limited understanding, especially children and young girls susceptible to the lures of white slavers; or at suppressing the more contemptible types of deception practiced upon the public.

By and large, economists supported this early welfare legislation, though not without considerable soul searching. The notion that freedom of contract is the sole source of efficiency and progress died hard and they required assurance that its restriction could be accomplished without impairing the rate of increase in man-hour productivity. John R. Commons was the most assiduous supplier of this assurance; but even John Bates Clark had to convince himself that unethical trade practices

211 (1899).

¹The most famous exposition of the doctrine of disinterested malevolence is Mogul Steamship Co. v. McGregor, Gow & Co. (1892), A.C. 25 (H.L.).

²United States v. Addyston Pipe & Steel Co., 85 Fed. 271 (6th Cir. 1898); 175 U.S.

were the instruments of monopoly before he could support their suppression.³

Politicians and judges who had never shared the economist's faith in the invisible hand had no such emotional problem. Their handling of economic issues from 1900 to 1929 is so pragmatic that it is difficult to characterize. Above all else, it was conservative. Even in the writings of Woodrow Wilson and Justice Brandeis, the improvement of economic performance is viewed as requiring minor institutional changes—a more elastic currency, stronger regulatory commissions, a closer supervision of mergers, food and drug laws, and a greater tolerance for labor unions.

The Depression Experience

And then came the depression—a catastrophe which changed the legal framework as has no other event before or since. At this late date it is for the historians to determine whether our misfortunes were due mainly to defective banking, inept statecraft, secular stagnation, or the bad luck of having been hit simultaneously by the nadirs of various production cycles.

Whatever its causes, the depression led most people to doubt that henceforth the economy could function satisfactorily within what was essentially a nineteenth-century legal framework. That this inference may have been unfounded—or that it inspired the wrong changes—is another matter. The depression experience produced, I believe, notably different reactions in economists and political leaders.

For the economists, it greatly simplified life. We did not cease to be Benthamites. But the percentage of the labor force employed became the only important criteria by which economic performance was to be measured. A colleague's interest in allocation problems could be dismissed as unseemly frivolity or an inability to face reality.

American congressmen were never sympathetic to the welfare approach to problem-solving; and the depression experience strengthened their suspicion. After 1929, the economist's stock objections to price control, industry subsidies, labor monopoly, and cartels impressed them not at all. If congressmen remained surprisingly timorous in their experiments, the caution should be ascribed to the difficulty of discarding the notion, taken for granted from childhood, that American economic institutions were a part of the natural order and hence largely beyond their power. But with some fears removed, Congress responded with an unprecedented volume of special interest legislation. I doubt that our lawmakers really believed that this legislation worked for recovery by

^{*} The Control of Trusts: An Argument in Favoring of Curbing the Power of Monopoly by a Natural Method (New York: 1901). Clark's natural method is competition purged of unfair trade practices.

adding to somebody's purchasing power as they often maintained. What most of them did believe, in the thirties, was that equity had nothing to do with efficiency and progress. Favors for special interests might not actually aid recovery; neither would they interfere with movement in this direction.

By my reading, the important New Deal measures were largely irrelevant to the task of reducing unemployment, though they did much to alleviate its worst horrors. Certainly these measures did little for recovery beyond soothing the nerves of frightened investors. If the most beneficial development after 1933 was the growth of the money supply, we owe far more to the disasters of Europe that increased our gold reserves than to deficit finance or the President's smile.

While the New Deal did little for recovery, it permanently altered the rules of the game for businessmen. Taken together, these rules changes had the intent—and effect—of reducing the flexibility of wages and prices. As we know, the money wage rate has been made virtually immune to a fall in the demand for labor anywhere in the economy; nor does the contribution of the federal farm program to price rigidity require comment. It is also likely that price flexibility has been perceptibly reduced by legislation designed to discourage price discrimination. The impact of this legislation is difficult to handle statistically. I pass along one frightening figure. Lawyers who make a living out of the discrimination clauses of the antitrust laws now number over four thousand.

Time precludes a further estimate of the intellectual legacy of the depression. But this I would maintain, that in the vast literature of the depression the professional economist shows up rather well. We sometimes forget that the Congressional reaction to the depression was largely one of resignation. Keep the unemployed from starving, pillory a few luckless bankers and speculators, cut the length of the work week to spread the burden of unemployment, and hope for the best. Economists were at least prepared to fight back—at any rate, after the initial shock of having lived through a 40 per cent fall in the national income had passed. The proposals of the profession, which looked mainly to an increase in investment, were sensible—if not exciting. And even the ingroup recriminations touched off by the General Theory are now seen to have involved little more than a technical dispute on the best way of cutting real wages in order to encourage investment. No doubt there were differences in the ideologies of Alvin Hansen and Henry Simons. I doubt that they would impress a Marxist or Buddhist.

Some Fears for the Future

On the part played by war and the rumors of war since 1940 in keeping unemployment below 6 per cent, it is tactless—if not unpatriotic—

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to speculate. What of the future? Given a reasonable level of international tension and arms expenditures, it is unlikely that anything very terrible will befall us through a malfunctioning of the economy. But I believe that the gulf between its feasible performance and its actual performance is likely to widen.

This pessimism has two foundations: (1) For at least half of the months since January, 1949, the economy has carried too much unemployment. The percentage of workers totally unemployed has been too high, the rate of labor turnover has been too low, and the work week too short. To those whose memories go back beyond 1940, the unemployment figure of 6.3 per cent registered in 1958 was distinctly ominous. (2) The loss of wage and price flexibility since 1929 makes it more difficult to maintain adequate employment in the face of changes in technology, consumer tastes, foreign markets, and the horoscopes of investors.

Many authorities contend that unemployment exists to the extent that real wages are too high; and hence that a better use of labor requires a reduction of somebody's real wage. Actually, with technology improving, it is seldom necessary to cut anybody's real wage either directly or indirectly by inflation in order to raise employment. It suffices that real wages shall rise less rapidly than man-hour productivity.

Nobody doubts that labor unions can block cuts in money wage rates. The important question is whether they are powerful enough to force a more rapid advance in real wages than would be forthcoming in an open-shop economy. The offensive power of unions is certainly less than their defensive power. But unless union members are completely deceived when they pay dues, unions can and do raise real wages; and this power need not be very great in order to raise unemployment by two or three percentile points.

If, as I believe, the task of maintaining the right level of employment is increasingly one dampening union pressure for increases in real wages, we have the same three alternatives that we had in the depression: direct wage controls, subsidies out of taxes to put the unemployed to work, and an inflation that cancels out some of the increase in money wage rates obtained by collective bargaining. As yet, direct wage controls are a matter of academic interest only. Subsidies can be used to provide some employment, provided that they are on a modest scale and appropriately disguised. But the hopes of most economists under age fifty ride on inflation.

Surely this faith is misplaced. The use of inflation to retard the rise in real wages assumes not only that you can fool most of the people most of the time but that you can do it with the same old trick. The growing popularity of escalator clauses in wage agreements suggests

otherwise. Moreover, in any viable society, the employed can always outvote the unemployed; so that, as we know from recent experience, our rulers may hesitate to decree inflation even when it might do some good.

There is, I suppose, a fourth possibility for dealing with unemployment. Like Mr. Micawber and certain presidential advisors, one can hope that something will turn up—a new industry, a benign mutation in consumer behavior, or a diplomatic crisis that increases the arms budget. Since something often does turn up—notably World War II and the Korean conflict—this alternative cannot be dismissed as frivolous.

One further ground for my pessimism I would mention. It is that a rich country has too many acceptable ways of disguising unemployment. We have had twenty years of legislation which, in the interest of spreading employment, requires that time-and-a-half be paid to workers employed more than forty hours a week. The possibilities for sugar-coating unemployment are virtually limitless, ranging from retirement at age fifty-five to requiring an A.B. degree before a youth can begin training as a mortician. Do not take this last possibility too lightly. In university circles, it is considered undesirable that anyone should begin the study of such exacting subjects as optometry, pharmacy, business administration, journalism, or accounting before the age of twenty-two. And once the label of education or leisure has been pinned to unemployment, any measure designed to allow us more choice between work and nonwork is, by common consent, reactionary.

The Case for Efficiency and Progress Reaffirmed

Suppose that my modest fears for efficiency and progress turn out to have some foundation. Does it matter? A wonderfully persuasive pen has recently assured us that, in the United States at least, the age of abundance is now here. Hence the long preoccupation of economists with efficiency and progress has become tiresome, pointless, and possibly pernicious. We ought rather to concern ourselves with those problems that cannot be solved by indiscriminately increasing the output of consumer goods.

If I seem reluctant to accept the assurance of Professor Galbraith that we have it made, you must allow for provincial myopia. My state—North Carolina—is near the bottom of the national income scale and still evidences many of the features traditionally associated with poverty: a high infant mortality rate, malnutrition, no welfare payments to the able-bodied unemployed, wife beating, and snake handling religious cults. Still Professor Galbraith would seem to have time on his side. Why worry?

The main reason for continuing to worry about efficiency and progress is that, in this world, the unemployed person is fated to have a truly terrible time. Professor Galbraith would largely eliminate the hardship of unemployment by paying a dole which in time of serious recession would become very generous indeed. I wish his proposal well. But I fear that, for most of us, work is sufficiently disagreeable that we are not disposed to share generously with those unable to obtain it.

Again, there is a case for continuing to stress the virtues of efficiency and progress lest we tempt fate too far. The affluent society has certainly been a long time in coming; it may not be here to stay. To assume that we are the first nation in history for whom Malthus and Professor Joseph Spengler have no message seems most presumptuous.

Finally, a flabby economy offends against intelligence. Admittedly people should willingly sacrifice income in order to lead more cultivated lives and assume civil duties. And young men and women should attend college to become wiser and better and not because they are destined for low-pay, dead-end jobs if they do not. But after age sixteen, one ought to have a choice between work and work substitutes without society applying unfair pressures to choose the latter.

I have talked of efficiency and progress, confident that my meaning is clear to all right-thinking people. I intend to finish in this faith, with no craven last minute effort to define terms. However, a few words on the difficulties involved in urging the virtues of efficiency and progress may be in order. These difficulties are formidable because, to paraphrase Professor Knight, economics consists mainly in expounding truths which would be self-evident if so many people did not have a vested interest in not seeing them.

That some inefficiency in this world is both inevitable and desirable is a truth so obvious that one hesitates to utter it. Everyone has a personal stake in some particular inefficiency and resents all efforts to remove it. Heaven forbid that educational foundations should ever pay by results. Nor is there really much hope that a day will come when economic issues are resolved mainly with reference to welfare criteria. In our professional capacity, we are condemned to preach the virtues of efficiency and progress much as the parson is doomed to exalt righteousness and censure wrongdoing—with little scope for originality, with the evidence of our failure all about us, but firm in the faith that we do some good.

And, when our well-meant advice is ignored or derided, we must, like the clergy, guard against the sin of despair which drives us away from the world—into, for example, an effort to find yet another precursor of Adam Smith or stability condition for perfect competition. So also must we guard against the sin of heresy which can cause us to

utter falsehoods in the hope of popularity—or simply out of boredom. We should, perhaps, resign ourselves to farm subsidies, General Motors, and the Teamsters Union; it is not seemly that we should speak well of them. In the economist, humor and nerve are not merely attractive human qualities. They are major intellectual virtues as well.

Conclusion

Since we stopped taking the property arrangements of the common law largely for granted, the performance of the economy has increasingly been subject to tests of equity and efficiency. While laymen have been mainly concerned to improve the fairness of the business game, economists have stressed the case for efficiency and progress, year in, year out. Professional opinion has occasionally changed as regards the best techniques for measuring efficiency and progress and the institutions which best promote it. But the Benthamite-world view of the economist has not materially altered in two hundred years. Hence, he has always viewed with skepticism all lay efforts to multiply the equity tests of economic performance lest production suffer.

Before 1929, it is unlikely that legislation designed to achieve a better business game had any significant consequences for efficiency and progress. The intervention was on too small a scale.

I submit that the rule changes produced by the Great Depression were of a different order of magnitude; and that by making wages and prices less flexible, they have added to our difficulties in securing good economic performance. It follows that I believe that such rule changes impairing wage and price flexibility should be rescinded. But with this qualification: In the early years of the depression money wages proved distressingly sticky; yet neither labor unions nor federal laws were important enough to block wage cutting at that time. Therefore, it is possible that money wages are inherently more inflexible than commodity prices, if only because workers will burn down their place of employment before they will take a drastic wage cut. If this be true, any downward pressure on the price level may cause unemployment regardless of the set of rules in force. Given this possibility, faithful adherence to the right set of rules can be no substitute for imaginative improvisation in economic policy. That is, I see no good reason to forswear, in advance, the use of any instrument that has served the cause of efficiency and progress in the past: industry subsidies, inflation, discretionary power for central bankers, or government ownership.

It is, of course, possible that we set our sights too high; that what we regard as satisfactory economic performance—which is, crudely speaking, rising man-hour productivity with less than 5 per cent un-

employment—cannot be had without federal control of wages and investment. Conceivably, the structure of costs and prices has become so ossified by corporate concentration, collective bargaining, federal procurement policies, and employee and investor expectations that nothing much can be done about it. Not that we need worry about this depressing possibility until we have at least tried to achieve adequate economic performance with the traditional tools: competitive markets and sensible monetary policy.

In any event, there is bound to be an element of luck in our apparent success or failure in the handling of economic issues. Given the right sort of technological progress, the occasional recession can be forestalled and mitigated by greater price and wage flexibility and the usual monetary and fiscal measures. Given perverse technological advance, we shall have no option but to accept greater unemployment or radically revise our institutional arrangements. In the face of this uncertainty, the only good principle, as Professor Knight observed in a somewhat different context, is to have no principles.

A CRITIQUE OF PRESENT AND PROPOSED STANDARDS

By Tibor Scitovsky University of California, Berkeley

There are several aims and standards that may be set for an economy; and I propose to consider three of these: to maximize consumer satisfaction, to promote growth, and to provide economic security. I shall deal mainly with the first of these, because most economists in this country consider it the primary aim of economic activity; and I shall deal briefly with the other two, treating them as proposed aims, although they are, of course, the primary aims of economic policy in many other countries.

To regard the satisfaction of the consumer as the aim of economic organization and conformity to consumers' preferences as the standard by which to judge the performance of an economy—these are the precepts of neoclassical economics, which still dominate most of our thinking. Not the least reason for this is the attractiveness of the neoclassical precepts. Their use has encouraged economists to look upon their subject as an objective science and, in some sense, a democratic one. Economics is objective, inasmuch as the criterion of consumers' preferences is given from the outside, treated by the economist as a datum, and revealed to him by consumers' actual behavior in the market. The democratic nature of economics derives from the economist's habit of identifying the consumer with the people and consumers' sovereignty with the sovereignty of the people.

This, admittedly, is a vastly oversimplified picture. To begin with, society's preferences as revealed by the market are aggregated from the preferences of individuals in such a way that each person's preferences are weighted by his expenditures. And since the distribution of expenditures depends on the distribution of income and wealth, so does also the weighted aggregate of consumers' preferences. The economist, therefore, who accepts the standard of consumers' preferences as revealed by the market has accepted as given not only each individual's tastes but also the distribution of income and wealth, which determines the aggregation of these tastes. Needless to say, while a good case can be made for considering sacrosanct individuals' tastes, it is an altogether different proposition so to consider the actual distribution of income and wealth. Economists generally slur over this awkward fact, possibly because it might be argued that consumers' tastes are

similar enough for a change in weighting to make no significant difference to their aggregated preference system.

Yet another difficulty—though one that relates only to collective and not to market goods—is that of aggregating individual preference functions in a democratic way into a meaningful (transitive) social welfare function. This is well known through Arrow's work and I shall not go into it here.

Many, perhaps most, economists choose to ignore these difficulties, regarding them as esoteric and leaving them to the welfare economist to handle as best he can. But no sooner have welfare economics and welfare economists been swept under the table than a new and even more formidable set of difficulties arises; and today the principle of consumer sovereignty itself is being called into question. Some people question the consumer's competence to decide what is best for him; others argue that certain issues he cannot decide because the market provides him with misleading or inadequate information; still others feel that the market makes available too narrow a range of alternatives for the consumer to choose from. I shall deal with each of these cases in turn.

The consumer's competence is denied by Professors Baran and Galbraith. Baran argues that the consumer's values and aspirations are variable and molded by the structure of the society and economy in which he lives. Even producers regard as variable—and spend 4 per cent of the national income on influencing—the very consumers' preferences that economists regard as data. It is absurd, therefore, in Baran's view, to judge the productive performance of an economy by a standard that is itself changing and influenced by the nature of that economy, especially since much of this influence is exerted by the self-same producers whose performance is being judged. He argues that just as society refuses to accept, and let the economy cater to, the tastes of drug addicts, so it should scrutinize and overrule if necessary the more foolish, frivolous, and irrational aspects of any consumer's preferences. He gives a catalogue of the resources wasted as a result of consumers' irrationality, including among others the resources devoted to advertising and salesmanship, to the production of automobile fins, to the annual retooling of the automobile industry, and to other industries' activities aimed at creating planned obsolescence.

Baran's criticism is well taken; but he becomes less convincing when he advocates the use of "objective reason" and "rational judgment" as guides to economic activity. He realizes that these criteria are easier to apply for ascertaining man's biological needs than his cultural requirements; but he feels nevertheless that research could establish objective judgments on the latter as well.

He fails to see that when it comes to allocating resources between the production, say, of books on the one hand and of television programs on the other, objective reason ceases to be a guide. One man's judgment on these matters may be wiser and more sensible than another's; it may take more, better and more reasonable considerations into account; but it still remains one man's subjective preference pitted against another's. It is important to realize this, because in accepting the impossibility of applying objective criteria to choices of this kind one is forced to face the practical problem of how to guard both against the waste and misallocation Baran rightly castigates and against too arbitrary and authoritarian methods in the making of economic decisions. By putting his faith in objective reason, Baran never seems to face up to this problem, although if nothing else, then the Communist countries' increasing reliance on consumers' preference should have warned him about the difficulty of using any other criterion as a guide to resource allocation.1

J. K. Galbraith in the Affluent Society reaches very similar conclusions. He too mistrusts the consumer's judgment as a guide and arbiter of resource allocation, although he considers the consumer's unreliability the result of his high standard of living. He revives the law of diminishing marginal utility to argue that the rise in the consumer's real income renders him increasingly unsure, diffident, and suggestible in his consumption decisions; and he quotes the great rise in advertising expenditures to support his explanation. He is unconcerned about the resulting misallocation of resources as between different consumer's goods, and rightly so; for if the consumer himself cares so little about how he spends his marginal dollar, why should the economist care more.

He is concerned, however, with what he considers a serious misallocation between consumers' goods on the one hand and collective goods on the other. He feels that the American public spends too much on consumers' goods and too little on collective goods, under the impact partly of advertising, which promotes only the former, and partly of a conventional wisdom, which views with suspicion most services provided by government. He thinks that if the judgment of consumers were not warped by salesmanship and distrust of government, they would see as clearly as he does the anomaly of luxurious housing in noisy and over-

¹ Cf. UN/ECE *Economic Survey of Europe in 1958*, pp. iv, 25 ff. for a discussion of how the Eastern European countries are using family expenditure data for planning production.

crowded cities, of well-fed and well-clothed children in bad schools, and of high living under the shadow of economic insecurity.

The second group of objections to consumer sovereignty has to do with the inadequacy of the market information on whose basis the consumer makes his decisions. Part of this inadequacy stems from the increasing technical and chemical complexity of consumers' goods; and on this little can be said, except that the main and obvious remedy lies in the establishment and rigid enforcement of strict standards to protect the consumer from fraud and health hazards.

Inadequate also is the information on which the individual's decision between consumption and saving is based. This determines the propensity to save, which in turn is one of the determinants of the growth rate of the economy; and many economists, especially the theorists of economic growth, deny the consumer's competence for making this decision. Their doubts are probably aroused by the great dependence of saving on income distribution; and they argue either with Pigou that the duly appointed government is more competent than the consumer to make a decision that will affect the welfare of unborn generations, or with Higgins that there usually is a conflict between the public's preferences as expressed at the polls and as revealed in the market place, and that in such cases the public's politically expressed preferences should be determining, since they are formulated with greater care and a higher degree of rationality.

Both these arguments are forceful. Yet another argument, however, against relying on the market in this matter is that even if consumers' savings decisions were fully rational and based on their desires to add to their future incomes, total private savings would still not buy the amount of growth consumers want, in the same way in which consumers' total spending on bread buys the total amount of bread they want. A parallelism between savings decisions and spending decisions would exist only if each person received and expected to receive no less and no more of an addition to his (and his descendants') income than the contribution his savings make to the growth of the economy. This condition, although fulfilled in the world of Ricardo's Principles, is not fulfilled in our world today. To begin with, wage and salary earners have too little inducement to save for the sake of higher incomes, because they expect their and their descendants' incomes to rise with the growth of the economy quite independently of their own savings. The independent businessman and the rentier are the only members of our economy who must save to raise their incomes; but death duties and the double taxation of savings prevent their obtaining for themselves and their families the full contribution of their savings to the growth of the economy; and this is presumed to weaken also

their incentive to save. Corporations come closest to obtaining the full contribution their savings make to growth; but it would be farfetched to regard corporate savings as determined by the savings decisions of individuals. All in all, the total growth created by individual savings-decisions in our economy is very tenuously related to and probably much lower than the amount of growth the community would wish to have and be willing to pay for if the market would reflect correctly the choice between present consumption and additional future income.

The third group of objections to consumer sovereignty is aimed at the inadequacy of the alternatives provided by the market. Whatever the consumer's competence to make decisions and whatever the information on which he bases his decisions, he can only choose from among the alternatives the market provides; and these may be unduly limited. In the past, the market seems to have provided a large enough variety of products fairly evenly distributed over the entire range of consumers' tastes so as to give a kind of best fit, with not too large a gap between market availabilities and consumers' wants for any one consumer. Today, however, economies of scale are changing this situation. Technical progress usually cheapens production only when large numbers are produced; and the resulting differences between the costs of small- and large-scale production restrict the variety of products in at least two ways. First, the minimum volume that demand for a product must exceed in order to render its production profitable is forever increasing; and this reduces the availability of many products and variants of products. For example, public carriers are increasingly making losses on their less frequented routes; and live music, the legitimate theater, and the publication of scientific and scholarly works are increasingly in need of subsidies for survival.

Second, the range of products tends to conform less and less to the range of consumers' wants even in the realm of profitable production. When economies of scale were small, a newcomer would enter or an established producer expand his market by offering a product slightly different from those already marketed and designed to cater to the special requirements of a hitherto untapped segment of the market. Today, in the age of mass production, it usually seems more profitable to design every product for the majority, however saturated majority demand may be already, and to expand the market by molding minority preferences through advertising or the offer of fringe benefits and added features. Hence the secular increase in the uniformity and decline in the range of products in almost every field. This need not always lead to a loss of welfare but it does render the market less liberal. The individual consumer is still free to fill his shopping bag with whatever collection of goods he wishes; but the nature of the goods from

which he chooses is imposed upon him by the tastes and wants of the majority. This is why the rationale of the majority's preferences, the influences that mold its wants, and the motives of those that influence it seem to have become the concern of every consumer.

In addition to this reduction in the number and variety of products, consumers' choice is further limited by the progressive substitution of non-price for price competition, which tends increasingly to offer consumers a choice from among competing packages of goods, with no possibility to buy only part of the package and reject the rest. Each package contains besides the product itself a number of fringe benefits, which range from the good and the indifferent to the objectionable and most of which the consumer would not buy, at least not in the form and quantities provided, if he had the choice. The most important of these fringe benefits is, of course, advertising and all the free services paid out of advertising.

I have dealt in such detail with the objections and qualifications to consumer sovereignty, because our accepted notions favor it. As to the other alternative aims of economic activity, I shall analyze the arguments in favor, because our accepted notions are against them.

It has been said by Peter Wiles, of New College, Oxford, that we must choose between choice and growth, and that growth is the better choice. It certainly is true that if we can make the cake grow bigger faster, then the way in which it is divided and utilized becomes that much the less important; it is also true that the economist's preoccupation with consumer's choice has led him to neglect problems of growth, which is all the more inexcusable if my earlier argument is correct that the growth rate of the laissez faire economy does not reflect consumers' preferences. I also suspect that the economist may well be more effective in promoting growth than he has been in improving resource allocation; but so far this is only a hope. In any case, the state has assumed responsibility for promoting growth in a number of countries, with budgetary surpluses supplementing private savings. and with growth becoming the primary aim of fiscal and monetary policy, superseding or absorbing such other aims as price stability or full employment. In the light of the foregoing arguments, all this seems economically sound and rational; the only arbitrary element is the particular rate of growth aimed at. The faster the growth, the higher its cost; and no one has yet defined the optimum rate of growth at which gains and costs balance. All, so far, use the political criterion for growth: keeping up with the neighbors is good and desirable and surpassing the neighbors is bad and proof of aggressive intentions.

Coming at last to the aim of economic security, I shall only deal with the part of it that first comes to mind when the welfare state is mentural requirements; but he feels nevertheless that research could establish objective judgments on the latter as well.

He fails to see that when it comes to allocating resources between the production, say, of books on the one hand and of television programs on the other, objective reason ceases to be a guide. One man's judgment on these matters may be wiser and more sensible than another's; it may take more, better and more reasonable considerations into account; but it still remains one man's subjective preference pitted against another's. It is important to realize this, because in accepting the impossibility of applying objective criteria to choices of this kind one is forced to face the practical problem of how to guard both against the waste and misallocation Baran rightly castigates and against too arbitrary and authoritarian methods in the making of economic decisions. By putting his faith in objective reason, Baran never seems to face up to this problem, although if nothing else, then the Communist countries' increasing reliance on consumers' preference should have warned him about the difficulty of using any other criterion as a guide to resource allocation.¹

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He is concerned, however, with what he considers a serious misallocation between consumers' goods on the one hand and collective goods on the other. He feels that the American public spends too much on consumers' goods and too little on collective goods, under the impact partly of advertising, which promotes only the former, and partly of a conventional wisdom, which views with suspicion most services provided by government. He thinks that if the judgment of consumers were not warped by salesmanship and distrust of government, they would see as clearly as he does the anomaly of luxurious housing in noisy and over-

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crowded cities, of well-fed and well-clothed children in bad schools, and of high living under the shadow of economic insecurity.

The second group of objections to consumer sovereignty has to do with the inadequacy of the market information on whose basis the consumer makes his decisions. Part of this inadequacy stems from the increasing technical and chemical complexity of consumers' goods; and on this little can be said, except that the main and obvious remedy lies in the establishment and rigid enforcement of strict standards to protect the consumer from fraud and health hazards.

Inadequate also is the information on which the individual's decision between consumption and saving is based. This determines the propensity to save, which in turn is one of the determinants of the growth rate of the economy; and many economists, especially the theorists of economic growth, deny the consumer's competence for making this decision. Their doubts are probably aroused by the great dependence of saving on income distribution; and they argue either with Pigou that the duly appointed government is more competent than the consumer to make a decision that will affect the welfare of unborn generations, or with Higgins that there usually is a conflict between the public's preferences as expressed at the polls and as revealed in the market place, and that in such cases the public's politically expressed preferences should be determining, since they are formulated with greater care and a higher degree of rationality.

Both these arguments are forceful. Yet another argument, however, against relying on the market in this matter is that even if consumers' savings decisions were fully rational and based on their desires to add to their future incomes, total private savings would still not buy the amount of growth consumers want, in the same way in which consumers' total spending on bread buys the total amount of bread they want. A parallelism between savings decisions and spending decisions would exist only if each person received and expected to receive no less and no more of an addition to his (and his descendants') income than the contribution his savings make to the growth of the economy. This condition, although fulfilled in the world of Ricardo's *Principles*, is not fulfilled in our world today. To begin with, wage and salary earners have too little inducement to save for the sake of higher incomes, because they expect their and their descendants' incomes to rise with the growth of the economy quite independently of their own savings. The independent businessman and the rentier are the only members of our economy who must save to raise their incomes; but death duties and the double taxation of savings prevent their obtaining for themselves and their families the full contribution of their savings to the growth of the economy; and this is presumed to weaken also their incentive to save. Corporations come closest to obtaining the full contribution their savings make to growth; but it would be farfetched to regard corporate savings as determined by the savings decisions of individuals. All in all, the total growth created by individual savings-decisions in our economy is very tenuously related to and probably much lower than the amount of growth the community would wish to have and be willing to pay for if the market would reflect correctly the choice between present consumption and additional future income.

The third group of objections to consumer sovereignty is aimed at the inadequacy of the alternatives provided by the market. Whatever the consumer's competence to make decisions and whatever the information on which he bases his decisions, he can only choose from among the alternatives the market provides; and these may be unduly limited. In the past, the market seems to have provided a large enough variety of products fairly evenly distributed over the entire range of consumers' tastes so as to give a kind of best fit, with not too large a gap between market availabilities and consumers' wants for any one consumer. Today, however, economies of scale are changing this situation. Technical progress usually cheapens production only when large numbers are produced; and the resulting differences between the costs of small- and large-scale production restrict the variety of products in at least two ways. First, the minimum volume that demand for a product must exceed in order to render its production profitable is forever increasing; and this reduces the availability of many products and variants of products. For example, public carriers are increasingly making losses on their less frequented routes; and live music, the legitimate theater, and the publication of scientific and scholarly works are increasingly in need of subsidies for survival.

Second, the range of products tends to conform less and less to the range of consumers' wants even in the realm of profitable production. When economies of scale were small, a newcomer would enter or an established producer expand his market by offering a product slightly different from those already marketed and designed to cater to the special requirements of a hitherto untapped segment of the market. Today, in the age of mass production, it usually seems more profitable to design every product for the majority, however saturated majority demand may be already, and to expand the market by molding minority preferences through advertising or the offer of fringe benefits and added features. Hence the secular increase in the uniformity and decline in the range of products in almost every field. This need not always lead to a loss of welfare but it does render the market less liberal. The individual consumer is still free to fill his shopping bag with whatever collection of goods he wishes; but the nature of the goods from

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which he chooses is imposed upon him by the tastes and wants of the majority. This is why the rationale of the majority's preferences, the influences that mold its wants, and the motives of those that influence it seem to have become the concern of every consumer.

In addition to this reduction in the number and variety of products, consumers' choice is further limited by the progressive substitution of non-price for price competition, which tends increasingly to offer consumers a choice from among competing packages of goods, with no possibility to buy only part of the package and reject the rest. Each package contains besides the product itself a number of fringe benefits, which range from the good and the indifferent to the objectionable and most of which the consumer would not buy, at least not in the form and quantities provided, if he had the choice. The most important of these fringe benefits is, of course, advertising and all the free services paid out of advertising.

I have dealt in such detail with the objections and qualifications to consumer sovereignty, because our accepted notions favor it. As to the other alternative aims of economic activity, I shall analyze the arguments in favor, because our accepted notions are against them.

It has been said by Peter Wiles, of New College, Oxford, that we must choose between choice and growth, and that growth is the better choice. It certainly is true that if we can make the cake grow bigger faster, then the way in which it is divided and utilized becomes that much the less important; it is also true that the economist's preoccupation with consumer's choice has led him to neglect problems of growth, which is all the more inexcusable if my earlier argument is correct that the growth rate of the laissez faire economy does not reflect consumers' preferences. I also suspect that the economist may well be more effective in promoting growth than he has been in improving resource allocation; but so far this is only a hope. In any case, the state has assumed responsibility for promoting growth in a number of countries, with budgetary surpluses supplementing private savings, and with growth becoming the primary aim of fiscal and monetary policy, superseding or absorbing such other aims as price stability or full employment. In the light of the foregoing arguments, all this seems economically sound and rational; the only arbitrary element is the particular rate of growth aimed at. The faster the growth, the higher its cost; and no one has yet defined the optimum rate of growth at which gains and costs balance. All, so far, use the political criterion for growth: keeping up with the neighbors is good and desirable and surpassing the neighbors is bad and proof of aggressive intentions.

Coming at last to the aim of economic security, I shall only deal with the part of it that first comes to mind when the welfare state is mentioned: the provision by government of social services. Many of these could also be provided individually, through the market; and the fact that the electorates of so many countries have opted for their collective provision by government has led many American economists to suspect a preference for paternalism. There are, however, some perfectly good economic reasons why some—perhaps most—societies should prefer to provide these services collectively.

One reason is the expectation that the government will often provide better services cheaper. In the market, consumers can choose only among the alternatives available; and available private health insurance schemes, for example, are notoriously inadequate and limited in coverage. Similarly, no private insurance company will underwrite a pension scheme that insures against a rise in the cost of living, while the government, operating on a pay-as-you-go instead of on an actuarial basis, can do so and at reasonable cost. In an age of secular inflation this is an important argument.

Second, the collective provision of free services paid out of general taxation inevitably redistributes income in favor of the poor; and by voting for it the public expresses its preference for lesser inequalities. This is not an efficient way of redistributing income; but neither is progressive taxation beyond the point where it affects incentive. A further objection to collective services is that they always contain an element of compulsion, since the majority compels a minority to pay through taxation for services they would prefer to be free individually to buy or not to buy in the market. Hence the feeling that collective services violate the principle of consumer sovereignty. On the other hand, any kind of redistribution is virtually certain to involve compulsion; and if by voting for collective services the public expresses its desire to mitigate inequalities of income, it can hardly put such preferences into effect without an element of compulsion.

A third argument in favor of collective services is that the compulsion involved may be something the public wants to impose upon itself. To begin with, the theory of rational consumer behavior paints too simple a picture of human nature when it implies that a rational person is equally rational in all his actions. People may, in different situations, have very different ideas on how to apportion their income between present consumption and provision for old age, sickness, and accident; and they may wish, in their serious moments, to put compulsion upon themselves in the form of higher taxes to guard against the temptations of the market place. Second, part of consumption in modern society aims at keeping up with or surpassing the Joneses; and it is easier to sacrifice part of one's present consumption to pay for social insurance if the Joneses have to do likewise.

To condemn these features of the welfare state as paternalistic would amount to condemning the preferences of the people who voted for the welfare state. This might well be justified; but it is inconsistent with an attitude that considers sacrosanct people's preferences when expressed in the market. Indeed, the main lesson to be learned from all this, from my account of the criticisms and shortcomings of consumers' sovereignty and of the benefits and advantages of alternative aims, is that the economist can no longer regard his standards as given to him from outside, but must make a judgment of his own what standards to accept within what limitations and with what qualifications.

DISCUSSION

VINCENT W. BLADEN: Ten years ago Sir Dennis Robertson gave a brilliant short address to the Royal Economic Society entitled, "On Sticking to One's Last." This is the advice that I feel we badly need today. "I do not want the economist," said Sir Dennis, "to mount the pulpit or expect him to fit himself to handle the keys of Heaven and Hell. . . . I want him to be rather humble. . . . I like to think of him as a sort of Good Dog Tray rather than as a Priest for Ever after the Order of Melchizedek."

This is a very different picture of the economist from that of Professor Dewey (at least as he appears at the beginning the paper); his economists are secular, condemning "all religious restraints that are inimical to higher manhour productivity"; they are unromantic, refusing "to sacrifice national income in order to maintain a happy peasantry or a culture-bearing leisure class"; they are materialistic, regarding happiness as a more worthy goal than salvation; they are optimistic in supposing that the "sum of happiness is increased by growing man-hour productivity." This is preaching by indirection, and by misrepresentation. The economist, when he sticks to his last, accepts the deliberate choice of religious restraints on productivity, but may undermine the authority of those who impose those restraints by drawing attention to the conflict of ends. The deliberate acceptance of poverty is one thing; the thwarting of a deliberate search for plenty is another. Similarly the economist does not refuse to sacrifice income in order to maintain a happy peasantry or a culture-bearing leisure class. What he does, if he sticks to his last, is to make clear the cost. He may have some doubts about the happiness of the peasantry or of the culture of the leisure class; but in doing this he would be slipping. It is not for him to choose! And certainly he is not against salvation; but he finds that men do in fact seek wealth, and he sees it as his job to bark with a loud voice when they stray up blind alleys in the search for it. Nor do economists suppose that there is a simple relationship between wealth and happiness, or welfare. That is nonsense. But let us not forget that a lot of unhappiness is the result of dire poverty; and that a lot of things that many of us want more of, in this "affluent society," can only be supplied adequately if productivity increases. I am thinking of drama and music, of education and health services, of better houses and more beautiful cities. I have little hope of getting more of these as a result of a developing asceticism, through a shrinking of our present wants!

At the end of his paper Professor Dewey reaffirms his faith in "efficiency"; this is worthy of emphasis and it does not mark him out as irreligious, materialistic, or unromantic. I only want to say that it is not only in North Carolina that the affluent society is an unconvincing picture; to commend his phrase, "a flabby economy offends against intelligence"; and to urge serious consideration of the danger of unfair social pressures driving many young people into educational institutions for which they are unsuited.

We turn from Professor Dewey and man-hour productivity to Professor Scitovsky and consumer preference. It is not enough to produce quantities of things; they must be the right things. But what are the right things? This is for the prophets and the priests. Economists have concerned themselves, and properly so, with "conformity to consumer preferences as the standard by which to judge the performance of our economy." In his paper Professor Scitovsky comments on various criticisms, particularly those of Galbraith. I was disappointed that he did not return to the point he made at the end of his discussion of Baran: "increasing reliance on consumer preference in Communist countries should have warned him about the difficulty of using any other criterion as a guide to resource allocation." At this point I leave my last to preach: I leave discussion of the stresses that develop where allocation of resources is not so directed, to preach the value of free choice. The case is based not so much on a belief that the adult individual knows better what is good for him than does anyone else but rather on a belief that the individual can only develop as a fully mature adult if he has freedom to choose, freedom to make mistakes. This does not mean that I admit no qualifications; when the community must carry the burden of cost resulting from the mistaken choice, it may well find it necessary to prevent such choice. When the community wants to render less unequal the standard of living of its members, it may find that the provision of some free or subsidized services is easier to arrange than an increase in the free income of the poor. But there is a case for free choice—a case, for instance, for relief in money rather than relief in kind. I believe that this desire for freedom of choice is deep-seated and expresses itself through political channels as well as economic. The economist, sticking to his last, may admit that his attachment to this criterion of performance—the "economic criterion" as Harrod once called it—involves a judgment beyond his scope, yet he may properly consider it his job to bark whenever the criterion is ignored, to make sure that the full implication of ignoring it is understood, that the cost is assessed properly. But if his master is happy to have his freedom of choice limited, Good Dog Tray must be content to have barked; he must not bite.

What does advertising do to this? Does it destroy the case for the market? To my mind it does not. Persuasion is an inevitable accompaniment of free choice, in political elections as well as in the market. What we should fear is a monopoly of persuasion: Big Brother telling us through all available media what to think, what to want, what to do. Competitive persuasion may be wasteful, but it is part of the price of freedom. And let us not exaggerate the gullibility of man. The present state of the automobile industry is a nice commentary on the failure of the manufacturers, with all the armament of advertising, to sell us battleships with fins. And yet I have one suggestion for curbing advertising: since heavy corporation profit taxes came into the picture, the government may be said to be paying half the advertising costs of all successful businesses. This can lead to gross extravagance. Can we devise a sensible criterion for limiting the amount of advertising and sales expense which can be charged as a cost for tax purposes? But this is not the only, nor perhaps the worst, extravagance which these taxes promote.

Then we are told that consumer preference has been thwarted by standardiza-

tion. Again I feel little worried. If we seek cheapness and plenty, we cannot ignore the economics of mass production. But the high incomes possible in a mass-production economy make possible some concern for variety even amongst the masses. The individual craft product is, of course, expensive, not just by contrast with the cheap, mass-produced alternative, but absolutely because the craftsman commands high pay as a man who has the alternative of employment in the highly productive mass industries. Though expensive, it is accessible to many, because of their high incomes. No one who has been shopping for Christmas, no one who has watched automobiles go by on a highway, can really say that variety is not available. If our own craftsmen will not produce variety, we buy from other countries; nor is it only the varied products of their craftsmen that we buy, but also the products of their large-scale industries. The Volkswagen, the Citroën, the Austin, the Fiat, to mention only a few of the invaders, see what they have done to the industry here!

A last word must be devoted to growth. I cannot say anything useful about the proper rate of growth, but I think the economist should bark very loudly when the public and private plans for growth are inconsistent. I am very unhappy about our failure in Canada to counteract the nonsense of the politicians who blame tight money on the banks, or, when in opposition, on the government. How rarely is the blame put squarely on our own shoulders. We will not save enough, nor accept a high enough level of taxation; we will not cut our current consumption to the degree that would be consistent with the growth of private capital and social capital in a period of high armament expenditure that we politically accept. The economist, sticking to his last, has lots to bark about; he need not arrogate to himself the choice of a rate of growth; he must make clear the implications of the choice. We need to rediscover the value of simple economics and to recognize how much wisdom there was in the "conventional wisdom" at which Galbraith jeers.

KENNETH E. BOULDING: Although I felt I had learned something from these papers, it did not seem to me that either of them analyzed the problem in the depth which it deserves. I would particularly like to call attention to the necessity for examining the problem of the criteria to be used in passing judgments on an economy at three levels. At each of these three levels we can distinguish three further broad characteristics of the economy, none of which is a substitute for any other and none of which can be expressed in terms of any other. These can be described as riches, justice, and freedom. The first level of description is that of the state of the economy as it exists at a moment, particularly, of course, at the present time. Economies can be described as rich or poor, just or unjust, free or unfree, with no doubt many intermediate grades. If we extend the present beyond a mere moment of time and take in a span of years, we may wish to add a fourth category: stability. This would encompass the past history and the future prospects of either of the three major values with particular reference to their short-run fluctuations. An economy which is rich now but has had a history of ups and downs is obviously in a different condition from an equally rich economy which has not had such a history. The second level of description of an economy consists of the present and perhaps the prospective rates of change of the fundamental variables. We can examine

the rate of growth of riches (whether we measure this by income or by wealth), of justice, and of freedom. An economy may be poor now but it may be growing richer rapidly. It may be unjust now but it may be progressing towards social justice. It may be unfree now but it may be progressing towards greater freedom. It is this level of description which perhaps weighs most heavily in men's minds when they come to make an over-all judgment. We would be more comfortable, I think, in contemplating a poor economy that was getting richer than a rich economy that is getting poorer. Similarly, the lack of present justice and freedom will worry us less if there is a clear movement in the right direction. It is an interesting commentary on the present condition of economics that almost all the attention of economists who are interested in rates of change is concentrated on the rate of change of income. One might almost think that economic dynamics is limited to this variable. There is some excuse, of course, in that income is reasonably measurable, whereas justice and freedom are imponderables. We should not be deceived, however, into estimating the importance of a variable by its mere measurability.

The third level of description of an economy relates to the ultimately stationary state towards which its dynamic processes are leading. This is a study which has become so unfashionable as to have almost disappeared. Nevertheless, it is by no means without interest even in this day and age of apparently permanent change. The question, for instance, as to whether a permanently high-level economy is possible is still unanswered. If it is not possible, then all that economic development does is to accelerate the progress of mankind towards misery. The Malthusian danger signals are hanging out pretty clearly in many parts of the world. There may be equally important though less noticeable dynamic processes at work, for instance, in the exhaustion of natural resources, or in the ultimate limitations of the expansion of human knowledge. An ecologist recently made the suggestion that civilized (that is, developed) man is merely a pioneer species, expanding with extreme rapidity into a relatively empty environment. The future of the pioneer species, however, is dim. It proceeds almost inevitably to the exhaustion of its environment and something a little less ambitious takes over. One wonders sometimes if this is not the end of our boaster high-level technology. This may be an unfashionable study, but it is unquestionably important and in the long run perhaps this is the most important criterion by which to judge the performance of an economic system.

HENRY M. OLIVER: Professor Dewey offers "efficiency" and "progress" as his two chief policy criteria, states that "from the Wealth of Nations onward, economists . . . have never doubted that laws are good if they promote efficiency and progress and bad if they thwart it," and characterizes the reasoning which utilitarian economists commonly employ as "the welfare approach to economic issues." Although he does not define his two key terms, apparently his definitions are about as follows: "maximum efficiency" is the utilization of existing resources in such a way that consumption plus producer effort yield either maximum aggregate satisfaction or the maximum sum total of individual satisfactions individually weighted by income or some kindred variable; "progress" is the addition to and improvement of existing

resources so that consumption plus producer effort yield still greater aggregate satisfaction—or a still greater sum total of individually weighted satisfactions.

His statement that we all make interpersonal comparisons perhaps implies the former of these two sets of definitions; that is, the definitions involving aggregate satisfaction rather than the sum total of individually weighted quantities. On the other hand, his emphasis on "production" seems to imply definitions more nearly like those of post-Pigouvian welfare economics. When economists speak of changes in the volume of production, they usually do not define the term so as to include psychic effects of changes in distribution. But, in either case, Dewey makes it clear that he offers efficiency and progress as his two criteria because he believes that human happiness varies directly—even if not in exact proportion—with them, and he also argues that most economists have strongly believed in this positive association.

Now, I do not wish to challenge the statement that those economists whom Dewey would term "right-thinking" have been fairly thoroughgoing utilitarians and have furthermore thought that conventional welfare economics is a good guide to increased human happiness. Neither do I wish to hazard a guess as to what percentage of economists have been right-thinking. But I do wish to make two complementary suggestions: First, most economists probably do not value all satisfactions that come from consumption and leisure as highly as a proper Benthamite would. Next, one can be a good utilitarian and yet favor various measures which reduce efficiency and slow progress, as those terms are usually defined.

A good illustration for the first argument comes direct from contemporary academic life. I have met few faculty economists who remark how wonderful it is that students have so many automobiles and do so little work. Neither do the faculty critics of campus consumption and leisure usually go on to explain that the chief cause for their concern is the students' improper discounting of net national product which will be lost in the future. To speak somewhat more generally, probably most of us would not enthusiastically cheer governmental policy which merely enabled high-consumption, leisurely-living families to enjoy still higher consumption or greater leisure, even if the policy did not in any way depress the incomes or decrease the satisfactions of those families who were not aided. Both the old and the new formal welfare economics show that policy would in this case increase efficiency; but it is hard to imagine professional excitement over the leap forward. Or, to turn to a historical example, if Adam Smith and company had believed of mankind in general what some mercantilists thought of urban workers, that the only effects of higher man-hour productivity would be less work and more boozing, our traditional welfare economics would probably never have been developed. Very probably a common sentiment among economists, as among laymen, is that, although wants may be insatiable and unsatisfied wants may even be intense, some wants do not merit outside aid toward their satisfaction. Although we often moralize against moralizing, probably most of us have some pretty important reservations in our minds.

If this is the case, we gain in clarity by asking what it is we truly wish policy to accomplish. Dewey himself does this when, in reply to Galbraith, he does not urge the intrinsic goodness of satisfying more and more insatiable

wants, but instead talks about the evils of unemployment and the consequences of low incomes in North Carolina. It is only a step further in such reasoning to add that, although a rising national income tends to ease the solving of many problems, such as joblessness, discrimination against minority groups, and simple poverty, improved efficiency and progress are not in themselves solutions and may not be requisites to solutions of these problems; and, indeed, certain policies which further efficiency and speed progress may intensify evils which we abhor.

This leads up to the second suggestion mentioned above, that one can be a good utilitarian and yet favor various measures which reduce efficiency and slow progress, as those terms are usually understood. If we define efficiency as in the new welfare economics, we may favor distributional policies which make resource allocation less efficient. But even if we give efficiency and progress their stronger, old-welfare-economics meanings, the conclusion holds. Maximum human happiness is not identical with maximum net satisfaction received from consumption plus producer effort, and does not always vary directly with it, unless we define the utilities associated with consumption and the disutilities associated with producer effort in such a way that the conclusions of welfare economics are sheer tautologies.

The central thought here, of course, is that familiar welfare economics, which deals with the details of consumption and production, is not equipped to deal with broader questions. Nor do we remedy its basic limitations by making it "dynamic" and speaking of progress as well as efficiency. Sometimes we try to improve its coverage by speaking of "external gains" and "external losses" and may include among these losses such items as a thicker smog in Los Angeles, the incremental irritation caused by heavier traffic and wider cars, and the intensified social tensions which develop when newcomers move into crowded urban areas. But it does not help policy analysis to talk as if external gains and external losses are minor items in a utilitarian evaluation of production. They may be dominant. It may well be, for instance, that the combination of puritanism, anxiety to get ahead, and anxiety to conform with which the American public is often charged helps to explain our high man-hour productivity. If so, we are not necessarily happier because of these characteristics, and it is doubtful that the peoples of underdeveloped lands would be well advised to copy them. Similarly, it may be that, in some societies. Soviet methods produce a more rapid rate of growth than other methods, even when labor is not forced into unwanted jobs and unwanted hours, and Communist brain trusters may do a sufficiently good allocational job for the growth not to be fictitious. But the general level of happiness might still be higher if the society were less efficient and less progressive, but individuals made more decisions for themselves or led lives to which custom lent comfort or dignity.

Economists perhaps are not the persons best equipped to recognize the external gains and external losses associated with production, or to guess their quantitative importance for human happiness. If this is so, it is a reason for stressing our reasoning's limitations, and for caution in judging non-economists' judgments about the areas of our inexpertness.

RELATIONS BETWEEN ECONOMIC THEORY AND ECONOMIC POLICY

FROM ECONOMIC THEORY TO PUBLIC POLICY

By CLAIR WILCOX Swarthmore College

How has economic theory affected public policy? Such is the assignment. To fulfill it would require a lifetime of research, the results set forth in several volumes. Something less than that will be attempted here.

At the outset we must dismiss the view that economics cannot concern itself with policy. Policy, it has been said, depends upon value judgments and value judgments are unscientific. The economist can tell the policy-maker how best to get wherever he wants to go. But he cannot comment on the destination, be it paradise or perdition.

Economists, in the field of microeconomics, once felt that they had found a scientific means of judging policy. Action could be appraised by its effect on welfare; welfare could be measured by utility. Policy could be commended if it increased utility, condemned if it reduced utility. But the value of maximum utility had not been scientifically established; it had simply been assumed.

Utilities were found, in time, to be incommensurable. The economics of welfare lost its scientific tool. Employing new devices, the economist was again enabled to judge efficiency in allocation. But he was powerless, without indulging in value judgments, to appraise equity in distribution. And so it was argued that economics should ignore the ends of policy and confine itself to the means.

With the development of macroeconomics, however, the economist had been freed of his dependence on the utility calculus. Now he could appraise action by its effect upon employment. Policy that added to employment could be commended, policy that subtracted from employment condemned. Here, again, the economic scientist was in business. Making no value judgments, he stood on solid ground. But did he? The value of full employment had not been scientifically established; it had been taken for granted.

Value judgments, in fact, are not to be avoided. They govern the choice of problems for study. They provide the standards by which action is appraised. The best that can be done is to make them explicit. The requirement of objectivity will thus be satisfied.

Rightly or wrongly, economists have always dealt with policy. From Adam Smith to J. M. Keynes, each of the masters has addressed himself to the issues of his time. Political economy has been as much political as economic. Today, the profession continues faithful to its tradition. Economists, in books and articles and letters to the editor, tirelessly urge this policy or that. Economists draft campaign documents and give advice to pressure groups. Whole platoons of economists are paraded before committees of Congress. Economists advise the White House, the Treasury, and the central bank. They testify in trials before the courts. They arbitrate labor disputes, participate in negotiations with foreign governments, advise international organizations, shape programs for the development of countries all around the globe. Last—and we trust not least—they instruct the youth. With what effect?

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Politicians, in their recurring effort to save the nation by exterminating wrong-thinkers and eradicating wrong thoughts, have paid economists the compliment of assuming that their teachings strongly influence the course of events. Scholars have sometimes taken a similar view. The ideas of economists, wrote Keynes on the last page of the General Theory, "are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back." The contribution of the great economists, says Robert L. Heilbroner in his preface to the Worldly Philosophers, "was more decisive for history than many acts of statesmen who basked in brighter glory, often more profoundly disturbing than the shuttling of armies back and forth across frontiers, more powerful for good and bad than the edicts of kings and legislatures. . . . They left in their train shattered empires and exploded continents, they buttressed and undermined political regimes, they set class against class and even nation against nation—not because they plotted mischief, but because of the extraordinary power of their ideas."

Such appraisals, if they were taken to be true, might well inflate the economist's self-esteem. But they find scant support in an examination of the facts. Whether one starts with theory and seeks its consequence in policy or starts with policy and seeks its origin in theory, direct and clear causation is seldom to be found. By this test, at least, the role of the economist in history has been a modest one.

There is an outstanding case, to be sure, in which a number of

governments insist that their policies are based upon the teachings of an economic theorist. The theorist, of course, is Karl Marx. But the policies of Communist countries, in fact, bear as little relation to the theories of Marx as do the policies of Christian countries to the ethics of Christ. For light on our problem, we turn from the mythology of communism to economic theory and public policy in the United States.

First, there are important areas of theory where little or no effect on policy is to be found. This is true, for instance, of the theory of distribution. The theory of wages has had but little influence on the provisions of minimum wage laws, the content of collective bargains, • the decisions of arbitrators, or the principles adopted by wage stabilization authorities in time of war. The concept of interest is useful, to be sure, in determining investment policy, and the theory of interest finds an application in the field of monetary policy. But the theory of rent has done no more than bolster propaganda for the single tax, and the theory of profit is without perceptible effect. So, too, with the theory of population. In India and Japan, national policy reveals an awareness of demography. In the United States, however, the only population policies are those embodied in laws designed to hinder birth control at home, and in the government's refusal, just announced, to consider requests for aid in financing birth control abroad. And these are a testimony, it would seem, not to the teachings of the Rev. Thomas Robert Malthus, but to the political power of the Catholic Church.

Second, there are economic policies for which no origin is to be found in economic theory. The policy of conservation is the work of foresters, agronomists, and engineers; natural resources have seldom attracted the attention of economists. Free public education can easily be justified on economic grounds; the considerations that led to its adoption were social and political. Credit for the restriction of immigration must go not to economic theorists but to the American Federation of Labor. Social insurance is largely an achievement of economists, but not of economics. Its failure to cover sickness is due not to any difference in principle but to the political power of the American Medical Association. In the regulation of railroad rates, recognition is now given to elasticity of demand, but this is to be attributed, not to familiarity with economic theory, but to the competition of the trucks. In the regulation of public utility rates, the concept of elasticity is unknown. The price and rationing controls of World War II were fabricated by economists, but these were products of pure invention in which economic theory played but little part. Pay-as-you-go collection of the income tax is hailed by economists as an automatic stabilizer; it was adopted to facilitate administration. Lend-lease, the Marshall Plan, the extension of aid for mutual defense and for the development of underdeveloped countries—all of the programs of foreign aid had their origin in military and political necessity. The current demand for promotion of economic growth is a consequence, certainly, not of theory but of anxiety caused by the rapid growth of the Soviet Union.

Third, there are policies for which theory, though needed, is lacking, and policies whose proper implementation requires of theory a guidance that it does not give. Development and growth, it is agreed, depend on innovation; yet we have no theory of innovation, no way to determine what share of a nation's resources should be devoted to research. In fixing the size of its budget, government should have a means of determining the optimum level of public expenditures; in levying taxes, it should have a means of determining the limits beyond which incentives would be impaired; but economics affords no rules whereby these determinations may be made. To maintain stability, the stabilizers ought to know how the level of wages affects the volume of employment and whether rigidity of prices is prejudicial or conducive to stability; they ought to know how to achieve the optimum combination of stabilizers, how to insure their proper timing and their proper size. All of these are matters on which theory sheds a feeble light. In maintaining competition, the enforcement agencies and the courts need to know how monopoly can be identified, products defined, markets measured, and the structure of markets appraised, how far efficiency and innovation depend on scale, what terms in a decree will make an industry competitive-all of them matters on which economists have been of little help.

Fourth, there are fields where policy cannot grow out of theory because the theorists do not agree. One line of action is indicated by the theorists who believe that a stable level of prices is consistent with growth, another by those who believe that the level must be permitted gradually to rise if growth is to occur; one line by the theorists who attribute inflation to excessive demand, another by those who attribute it to rising costs; one line by the theorists who hold that spending responds to changes in the rate of interest, another by those who hold that it does not; one line by the theorists who argue that taxes reduce demand, another by those who argue that they raise prices; one line by the theorists who think that unions can raise wages, another by those who think that they cannot.

Fifth, there are policies that defy the rules of economics. It is possible to mention but a few: the mandatory support of agricultural prices at arbitrary percentages of fifty-year-old parity, the maintenance of resale prices for branded goods, the persisting limitation of

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urban rents, the tying of loans to other governments, the imposition of quotas on imports of sugar and petroleum, the payment of excessive prices for silver to be dug up in the West and reburied in the East, the irrigation of land at public expense to add to the surplus that the government will buy. In these and other instances, in the United States, the allocation of resources is distorted at the behest of pressure groups. The underdeveloped countries, too, though the recipients, in recent years, of high-powered instruction in the art of rational economic calculation, still foolishly persist in allocating their resources with no more rationality than do the countries whence advice has come.

II

There are a few cases—a very few—in which it seems that policy can be traced almost directly to the views of economic theorists. Here, we may include: (1) the attempt made by the New Deal in its early days, for better or for worse, to induce recovery by manipulating the value of money, (2) the initiation of the reciprocal trade agreements program and its expansion under the General Agreement on Tariffs and Trade, (3) the emphasis placed on grants rather than loans in the lend-lease program and in postwar foreign aid, (4) the construction of a new system of international exchanges under the International Monetary Fund, (5) the adoption of the Employment Act of 1946 and the creation of the Council of Economic Advisers, and (6) the accord reached by the Treasury and the Federal Reserve authorities in 1951. Diligent research might well disclose another case or two.

In almost every instance where economic theory and public policy coincide, however, one finds a combination of theoretical views and political pressures. At times, the theory leads the pressure. At times, the two go hand in hand. At times, the theory follows the pressure and gives it rational support. In some cases, policy acknowledges a debt to theory but pays it only in part. In others, policy remains the same when theory has changed. In still others, policy changes when theory has remained the same. Always it is difficult to determine what is cause and what effect.

The policy of maintaining competition, embodied in the Sherman Act, was clearly consistent with classical theory which held that the optimum allocation of resources was to be effected through competitive markets. But enactment of the law was a concession to politically powerful groups who felt themselves to be at a disadvantage and demanded equality of opportunity. Interpretation of the antitrust laws in the basing point cases was derived from the analysis of delivered pricing made by Frank A. Fetter a quarter-century before. But the government's campaign against basing point systems originated in

the demand of communities in the South and West for the removal of an artificial obstacle to their development. During the years when theory assumed that competition could be perfect, the antitrust laws were indifferently enforced. No sooner did theorists discover that competition was necessarily imperfect than enforcement took a new lease on life. When supported by theory, antitrust was feeble; when deprived of this support, it grew in strength.

The policy of free trade, in nineteenth-century Britain, found a solid basis in the theory of comparative advantage. But the repeal of the corn laws is to be attributed as much to the rise of industry and labor as to the teachings of Ricardo. Protectionism has had its theoretical defenders in the United States, but tariff policy from the Civil War to the Great Depression ran counter to generally accepted doctrine. In the thirties and the forties, under the trade agreements program, policy turned toward greater freedom. But in the fifties, though the authority to negotiate agreements was retained in form, it was rendered impotent in fact. Trade theory had not changed; political resistance had gained strength.

Progression in tax rates, when first adopted, was supported by the theory of marginal utility. Today, progression is retained though its psychological basis in marginal utility has long since been denied. Progression had its real foundation, clearly, not in economic theory, but in the popular sense of justice. This sense of justice now is served, of course, by keeping progression in form while political pressures are satisfied by opening escapes for which scant economic logic can be found.

Economists have recognized the necessity for direct controls to check inflation in time of war. Congress has voted the controls. But under pressure from agriculture, business, and labor, it has written provisions into the laws that have seriously handicapped their enforcement. Decontrol at the end of World War II was speeded, not by a belief that the general interest would be better served by freedom of markets, but by the demands of those who saw in spiraling prices an opportunity for quick profits.

Use of the powers of the central bank to stabilize the economy has been urged by economists since the early twenties. Yet the Federal Reserve Board moved tardily to restrain speculation in the twenties and to promote recovery in the thirties; it acquiesced in the inflation of the forties to facilitate financing by the Treasury. It was not until 1951 that the views of economic theorists were given recognition in the Treasury-Reserve accord. Today, economic opinion is virtually unanimous in opposing retention of the statutory ceiling on interest on long-term bonds, but congressmen, fearing a higher charge for loans to their constituents, refuse to change the law.

Unionization and collective bargaining were first accepted by public policy—and, indeed, endorsed by most economists—at a time when economic theory argued against monopolization of the labor supply. They were legitimatized by theory when economists embraced the view that labor markets cannot be competitive and when they came to hold that wage reduction is the wrong way to increase employment. Unions thus were granted respectability; they would have survived if it had been denied. Of late, the dangers of labor monopoly have been rediscovered by economists; the same discovery has been made by congressmen. Here, as elsewhere, it would be difficult to argue that theory was the chicken and policy the egg.

We take up last the case that first comes into mind. Keynes taught that government could counter depression by spending more and taxing less. The New Deal, at the same time, ran a deficit. It is widely believed that the relationship here was one of cause and effect. The New Dealers, it is said, embraced Keynesian theory and applied Keynesian policy. But the evidence does not support this view. Keynes, himself, was critical of the congeries of measures that was improvised in Roosevelt's early years. Roosevelt, on the other hand, was not impressed by Keynes. Nor were the brain trusters Keynesians. Had they been so, they would have bet more money on deficit spending and less on NRA. Until 1938, the deficits were unintentional. They first appeared, in fact, under Herbert Hoover, whom nobody has accused of being a Keynesian. They were increased by measures designed to give relief to the unemployed and to homeowners, farmers, and businessmen. They would have been incurred if Keynes had confined his writings to the theory of probability. In 1938, however, the lesson had been learned. As a consequence of the contraction of demand that followed the imposition of wage and payroll taxes, the use of deficits to stimulate employment was deliberately planned.

Today, economists differ in detail from Keynesian theory, and businessmen and politicians still denounce the policies proposed by Keynes as communistic. But Keynesian analysis, in its fundamentals, is generally accepted, and Keynesian policy is embraced by Republicans as well as Democrats. No administration that wants to stay in office will ever again permit the number of unemployed to rise above a moderate figure. No administration will seek to solve the problem of depression by cutting wages and prices and putting business through the wringer. Instead, government will spend more and tax less. This may be due to the fact that Keynes has permeated our thinking. It is also due to the fact that the consequence of each course of action has been learned through experience; that inflation is known to carry no political penalty, while deflation is known to spell political suicide.•

Ш

The influence of theory on policy is difficult to weigh. Policy is a product of many causes: environmental factors, political pressures, the ideas in men's minds. The demands of the environment are obvious; the pressures of politics clamorous. Ideas take a subtler form. Though not consciously acknowledged, though even repudiated, they may still affect the processes of thought. Though not susceptible to measurement, their influence may nonetheless be real. There is power, certainly, in the ideas, now widely held, that government has the duty and the power to maintain employment, that wages are never to fall, that all the gains from productivity are to go to labor, that social welfare and national security can be measured by real income per capita, that growth can be measured by the rate at which this income may rise.

According to Keynes, however, the theory that is brought to bear on policy is usually that of an earlier day. The world is ruled by little else than the ideas of economists, but these ideas, unhappily, are likely to be out of date. Practical men are the slaves of an economist, but a defunct economist. Madmen in authority distil their frenzy from an academic scribbler, but from a scribbler of a few years back. Theory takes on power when it has lost relevance. But here, Lord Keynes accords to his profession something less than is its due.

The economist, at the very least, is constantly aiding policy-makers in their task by equipping them with new and sharper tools of analysis. Through national income accounting and through projections of economic trends, he has enabled them to deal more effectively with problems of economic stability and growth. Through input-output analysis, he is showing them how to insure consistency in planning the combination of resources. Through operations research, linear programming, and activity analysis, he is enabling them to select the one, among alternative combinations, where values can be maximized or costs minimized. By undertaking to perfect cost-benefit analysis, he seeks to provide them with a means of establishing priorities for public investment. By attempting to construct a theory of bargaining, he seeks to throw light on the problems of negotiation.

Better analysis, however, need not result in better policy. Government, under political pressure, may still follow a course that renders lower benefits at higher costs. But there will be a difference. By their very existence, careful analyses of alternatives will affect the choices that are made. They will make it easier for government to resist the demands of pressure groups. They will strengthen the hands of groups exerting counter pressures. They will cause unsound proposals to be

modified and their terms improved. They will insure that wrong decisions, where they must be made, are made in full awareness of their cost. Sound economic analysis may be disregarded; it is not to be ignored.

There is no reason to assume, however, that theory and policy need always go hand in hand. Though problems whose solution is attempted by the theorist are usually those requiring decisions as to policy, they need not always be so. In economics, as in physics, there should be room for pure research. The policy-maker, on the other hand, will frequently face problems with which the theorist has never dealt. He will be forced to make decisions by the pressure of events. He cannot wait until the theorist catches up. All this is as it should be. We need not bemoan the fact that the theorist theorizes, that the policy-maker makes policy.

Even where their problem is the same, the theorist may speak a language that the man of action does not understand. The higher his level of abstraction, the more elaborate his models, the more remote may seem his contact with reality. But here, interpretation may be all that is required. Theory, however recondite, may find an application in the sphere of policy.

Theory is doubtless more influential in some areas than in others. It may be decisive in fields where the issues presented for decision are technical in character and where conflicts of interest are not existent, not realized, or not organized, or where conflicting pressures are in balance. It may be effective where it is moving with the current, enjoying majority support. Theory will seldom be influential where it runs counter to a political interest that is clearly realized and effectively organized.

Philosophers of history have differed regarding the influence of ideas on the course of events. There is no agreement, certainly, that ideas are controlling. If this is true of ideas in general, it must be even more so of academic theories in particular. Here, theory in economics differs little from theory in other fields. Since the economist deals with matters where conflicts of interest are involved, it is probable that he exerts less influence than does the natural scientist. Since he deals with practical affairs, it is probable that he exerts more influence than does the theologian or the philosopher. One may also suggest that he does as much as the political scientist to affect the processes of politics, as much as the historian to determine the course of history. If his theories are less than decisive in shaping policy, the economist finds himself in a goodly company.

THE INFLUENCE OF EVENTS AND POLICIES ON ECONOMIC THEORY

By George J. Stigler University of Chicago

The full range of subjects and problems which have attracted economists' attention throughout our history has been both extraordinarily wide and tolerably stable. The great multitude of modern economists do not work on a broader terrain than did Adam Smith and his sprinkling of contemporaries. True, some minor areas have been yielded up to younger sciences; for example, the economics of primitive peoples is now handled or mishandled by anthropologists. True, some minor additions have been made to our present-day agenda; for example, certain types of statistical problems are generally treated only by economists. But in the broad, the boundaries of the discipline have not varied much.

Within these wide-flung boundaries, however, the problems which arouse active interest and the variables which are deemed most significant have fluctuated greatly over time. In 1830, no general work in economics would omit a discussion of population, and in 1930, hardly any general work said anything about population. The problem of economic growth was at the forefront of discussion in 1825, it was almost ignored in 1900, and today it is again haute mode. And the question which has been posed to me is: To what extent have the areas of active work and the lines of attack been influenced by contemporary economic events and economic policies?

Ι

To be sane one must recognize at least a portion of the physical and social world in which he lives; so the sane economic theories have always had at least a possible connection with the world in which they were written. It is not surprising, therefore, that many historians have explained and even justified past economic theories by the special circumstances of the time and place in which they were written.

An example both contemporary and extreme is afforded by W. Stark, who has said that "modern economics immediately appears as a simple product of historical development, as a mirroring of the socio-economic reality within which it took its origin, not unlike the various theories which have preceded it." Literally read, Stark seems to assert even

¹ The History of Economics (New York, 1944), p. 2.

that the growth of mechanization between 1817 and 1820 forced Ricardo to qualify the labor theory of value published in the former year.²

No such detailed reconciliation of economic theories with their environments, however, is even remotely tenable. When two Englishmen, named Mill and Cairnes, found themselves on opposite sides with respect to the validity of the wages-fund doctrine, both theories could not be mirroring the same reality. If their mirrors were turned to different realities, the environmental explanation of economic theories becomes too flexible to be useful.

Wesley C. Mitchell presented the same general viewpoint in a much more qualified version:

The passing on of ideas from one to another and the development of these ideas by successive generations as an intellectual stunt has been in economics a secondary rather than a primary factor. The thing which has most of all stimulated the minds of successive generations of economists has been to endeavor to contribute to the understanding of the problems with which their generation as a whole was concerned....

These economic problems were caused primarily by changes in the economic life of the people, changes that were coming about through a cumulative process.³

Thus Mitchell finds the leitmotiv of Smith in the emergence of individualism, of Ricardo in the problems raised by the Napoleonic Wars, of Marx in the growth of an urban proletariat, etc.

That major economic problems sometimes become matters of paramount interest to economists is not debatable. But this is not enough to make the environmental theory useful; i.e., to make it more than a platitude. To be useful in explaining the subject matter of economics, the environmental theory must be given a more specific content. The theory could be developed in various directions. Let me discuss three.

First, it could be asserted that every truly major economic development leaves its imprint on economic theory, at least in the choice of subject matter of the theory and possibly in its major empirical hypotheses. Although some historians approach this view (e.g., Leo Rogin in a special policy oriented version), it seems to me clearly untenable. At the height of the industrial revolution, when great technological advances were crowding hard upon one another, the main tradition of classical economics treated the state of the arts as a datum. The arts were held to be subject to sporadic improvements, but not of a magnitude comparable to the force of diminishing returns in agriculture. Here, then, the almost overwhelming characteristic of economic life was excluded from economic theory. Again, perhaps the second most influential development (or a special form of the first) in economic

² Ibid., p. 37. Actually Ricardo had the same value theory at both dates and also in 1819.

⁸ Lecture Notes on Types of Economic Theory (New York, 1949), pp. 45-46.

life in the ninteenth century was the improvement of transportation, which never played a strategic and usually not even an explicit, role in economic theory.

Second, it could be maintained that even though not all major social and economic developments left their imprint on economic theory, every important element of economic theory sprang from this source. And this, too, would be untenable. The prolific analyses of utility theory from 1870 to 1915 and from 1932 on reflect no detectable environmental influence. The doctrine of noncompeting groups emerged centuries after it would have been most realistic. The economic system did not become linear about 1946. Of course, after the event one can always find something in the environment—especially if we include the intellectual environment—that may be related to the development in economic theory, but this is an exercise in erudition, not in explanation.

At this point we may pause to observe that a basic distinction must be drawn between the period in which a field of study is dominated by controversies over policy (applications) and the period in which it is a discipline pursued by professional scholars. In the age of mercantilism, all economics was oriented toward contemporary problems and institutions. Some of the writers analyzed problems more deeply than the immediate policy needs dictated, but their work was highly personal and mostly noncumulative. Beginning with the Physiocrats, economics began to be cultivated increasingly by scholars, and scholarly values such as consistency, generality, precision, and elegance began to be introduced.

In the period of the classical economics, this disciplinary aspect of economic study became increasingly more prominent. Hume, Smith, Malthus, Senior, Whately, Longfield, and Cournot all had scholarly, and usually academic, orientations towards economics, and after 1870 this orientation became, not merely dominant, but well-nigh exclusive.

Thus it is a sign of the maturity of a discipline that its main problems are not drawn from immediate, changing events. A genuine and persistent separation of scientific study from the real world leads to sterility, but an immediate and sensitive response to current events stultifies the deepening and widening of analytical principles and techniques. The leading theoretical chemists are not working on detergents or headache remedies and the leading economic theorists need not be concerned with urban renewal or oil embargoes.

There remains a third interpretation of the environmental theory: that economic problems and developments can be classified into groups which impinge very differently upon economics. This seems to me both correct and potentially fruitful, and I shall attempt a tentative classification of economic problems from this viewpoint.

The vast majority of all current—I shall call them popular—social

economic problems are routine from the viewpoint of economic theory. This excise or that central banking policy, this farm subsidy or that housing program, this stock pile or that form of wage bargain—all are essentially routine in their demands on the theory. The facts of the case may vary, or the juxtaposition of two policies may offer complications, but fundamentally no new demands are put on the theory.

This is not to say that the theory is necessarily adequate to the demands one would like to put on it. The theory may have deficiencies in logic, or be ambiguous with respect to significantly different outcomes, or its predictions may even be contradicted in certain respects by events. But imperfection is as inevitable in theory as it is in man, and one does not need new incidents to document it.

A second class consists of events of major economic significance: the colonization of a continent; major wars; basic technological advances such as the railroad; and great depressions. It is more remarkable that most of these events leave economic theory essentially unaffected. Since Ricardo's time, wars have had little effect upon the basic theory, although many illustrious economists (among them Edgeworth, Pigou, and Wicksell) have been stimulated to write about the economics of war. The current popularity of the economic theory of development has not yielded important theoretical results. It may be (though I somewhat doubt it) that Keynes's General Theory was the product of the Great Depression, but if so it is one of the very few great events that have affected the basic theory.

One reason for the impotence of great events is that from the view-point of economic theory they are also usually routine. A war may ravage a continent or destroy a generation without posing new theoretical questions. And even the theoretically challenging catastrophes are not likely to be influential, for a simple reason: the great event is a poor stimulus to anything except a basic reconstruction of the science. Minor changes in a theory hardly seem appropriate—let alone adequate—to great new problems, and extensive reconstructions of economic theory are usually the result, not of a frontal assault on the traditional theory, but of the systematic elaboration of a single basic and pervasive idea which previously had been ignored or given only ad hoc recognition.

And this suggests the third and theoretically influential type of economic problem: that which is pervasive. It is not enough that a problem be of vast importance, if that importance is momentary; it is not enough that the problem be persistent, if it is local to a particular market. A theory is a statement of general relationships: a theory of unique events is a contradiction in terms, and a theory of local events is simply uninteresting from the scientific viewpoint. The most pervasive problem of economic life is of course that of value, and this is

why the routine and undramatic problem of value has elicited the supreme efforts of the greatest theorists.

On this view, one can predict that certain problems will affect economic theory and others will not. The problem of personal income distribution will eventually receive much theoretical attention, since it is a problem of all economies and all times. On the other hand, the economic problems of cold wars will not influence economic theory unless such wars become general and persistent—and this will probably not happen because cold wars seem intrinsically unstable situations.

Since neither popular economic problems nor heroic events influence much the development of economic theory—and please notice that I distinguish economic theory from discussion by economists, and deal only with the former—do theoretical changes come only from, as Mitchell puts it, "the development of these ideas by successive generations"?

My answer is, proximately, yes. The dominant influence upon the working range of economic theorists is the set of internal values and pressures of the discipline. The subjects for study are posed by the unfolding course of scientific developments. With the introduction of mathematical technique it became inevitable that there be a theory of general equilibrium. The marginal utility theory must sooner or later—the great surprise is that it took two decades—lead to the general marginal productivity theory. The untidiness in the theory of the firm was bound to attract a Sraffa and a Viner.

This is not to say that the environment is without influence, for every great economist injects some portion of it into the developing theoretical corpus. This element of realism, however, need have no simple or direct connection with the contemporary scene. Menger, Jevons and Walras took the most pedestrian, even vulgar, "fact" of diminishing marginal utility of objects to man as their element of realism, and with it reconstructed a large part of the theory of value. Marshall took an equally pedestrian fact—that it takes time to do things thoroughly—and constructed his theory of short- and long-run normal prices.

Whether a fact or development is significant depends primarily on its relevance to current economic theory. There is no intrinsic basis for saying that the fact (1) people spend a lesser fraction of their income on food as they become richer is less important than the fact (2) people save about the same share of their income as they become richer. Yet Engel's law (now a century old) had no effects on economic theory for a long time, and no direct influence to this day, but Kuznets' finding has contributed substantially to the excitement and controversy over the consumption function. Kuznets' fact was an ostensible contradiction of the ruling theory whereas Engel's fact was and is outside the domain of the ruling theory.

Every major development in economic theory in the last hundred years, I believe, could have come much earlier if appropriate environmental conditions were all that was needed. Even Keynes's General Theory could have found an evident empirical basis in the post-Napoleonic period or the 1870's or the 1890's. Perhaps this amounts only to saying—what is surely true and almost tautological—that the elements of an economic system which economists believe to be basic have been present for a long time. The nature of economic systems has changed relatively little since Smith's time.

Thus I assign a minor, and even an accidental, role to the contemporary economic environment in the development of economic theory since it has become a professional discipline. Even where the original environmental stimulus to a particular analytical development is fairly clear, as in Ricardo's theory of rent, the profession soon appropriates the problem and reformulates it in a manner that becomes increasingly remote from current events, until finally its origin bears no recognizable relationship to its nature or uses.

The channel through which economic events are reaching economic theorists is undergoing change. Specialization has created the empirical research economist, who collects and systematizes the (some) facts of economic life. He is becoming substantially the only source of information for the specialized theorists: the only things the theoretical economist knows about economic life are those things the empirical economist tells him. All other sources (the theorist must increasingly assume) are unreliable or unrepresentative—in short, unscientific.

It does not follow that the theorist is the slave of the empirical economist, for the latter usually collects data recommended by the ruling theories. The national income accounts, for example, are a creature of economic theory. But the empirical economist also collects many facts not dictated by the theory, some because of his own intuitions (be they theoretical, propagandistic, or what), some because policy enforcement makes the data available.

Whether this specialization will increase the sensitivity of theory to events is an open question. The statistical work of Gardiner Means on administered prices has had an extensive effect on theoretical literature, but it can hardly be said (and indeed Means expressly desires) that the phenomena he found were new phenomena. The work of John Kendrick and others will undoubtedly influence the theorizing on technical progress, but again the underlying phenomena are not new. My guess is that most empirical research economists will possess the professional values, and hence will seek pervasive and stable empirical

⁴ Much of this work was also done earlier by Frederick Mills, however, without a comparable effect—partly because Mills did not use it as a springboard for extreme policy insinuations.

uniformities rather than seek to detect quickly any new economic phenomena. If so, the specialization will not affect greatly the relationship between theory and contemporary events.

II

Public policy is no doubt a part of the environment broadly construed, but it is a separable part. Policies and policy proposals are not closely geared to events. Policies designed to lessen income inequality emerged during a period when market forces were making substantial contributions to this end, and a similar relationship between policy and events is found in hours of labor, provision of education, the development of domestic manufacturing, etc. Here policy rides on the wave of events, although often it makes impudent claims to leadership. Often, too, policies are initiated in one country to deal with problems which are more serious in other countries: American antitrust policy is an example.

Nor should we forget that few policies, even successful policies, change the basic nature of the economy. The fact that our country had a protective tariff before 1932, but England did not, was not enough to make the basic theories of economics less applicable to one of the countries. Reformers and deformers of economic life dare not take the Olympian stance of economic theory, but neither dare economic theory become academic journalism with its excitement over fundamentally unimportant changes.

The classical problems of public policy have always provided much of the standard fare of economic theory: tariffs and monetary standards; monopoly; control of business fluctuations; the role of government and unions in labor markets; the incidence of taxes; banking structure; the treatment of the indigent—these have been persistent problems of policy and therefore of economic theory. The efforts of economists to understand these problems have led to advances in every branch of theory, including the most abstract branches.

It should not be necessary to retrace in detail the argument of the previous section, which is fully applicable: only general and persistent policy questions are likely to call forth permanent advances in the theory. The unending train of ephemeral or local policy questions is of no more significance for economic theory than the corresponding types of economic developments.

But continuity and pervasiveness of policy are not enough to command influence on theory. We have been regulating railroads for seventy-two years, but neither this instance nor a hundred others of governmental regulations have brought forth even the rudiments of a theory of regulation. Nor has a century of protectionism called forth a

substantive theory of the content and level of tariffs. On the other hand, our antitrust policy has been a main source of continued interest in monopoly, and it may be more than coincidence that the interest of English economists in industrial organization has been reviving since a monopoly policy was adopted in England. Like empirical facts, policies must be directly relevant to the main topics of traditional theory if they are to achieve easy influence.

Policies have better press agents than events; so a commanding policy controversy—such as that on full employment in the thirties or the rapid attainment of terrestrial prosperity today—captures the interest of a large number of economists. This tendency is now reinforced by the foundations, which are headed by men who (like all sensible people) find a headline more comprehensible and persuasive than a vague prospectus for a scientific expedition. But important, basic theory is not very responsive to explicit demands. A great many facts will be found or fabricated, and a literature will be amassed and then tidied up, but a basic development awaits a man of vision. He, likely as not, is wholly preoccupied with something which only he will make important. The marginal utility theory owed nothing to immediate policy problems, nor did the marginal productivity theory, the theory of capital, the theory of imperfect competition, game theory, etc. Conversely, all the disinterested and avaricious attention lavished upon business cycles has not yielded a useful short-run theory, and the ratio of cliché to analytical creativity in the literature of economic development is awesome to contemplate.

Often, of course, the explicit policy desires of economists have had a deleterious effect upon the theory itself. The bending of theories to views of tax justice popular with economists as well as the public has been chronic. Ever since Mill recanted the wages-fund doctrine ostensibly for unimportant analytical reasons, much of labor economics has had a flavor easier to explain by economists' policy preferences than elaboration of their general economic analysis. Almost always, I conjecture, the effect of policy views on the general theory (and not merely one man's version) has stemmed from a feeling that the theory must adapt to widely held humanitarian impulses.

Yet economic theory often takes a hostile stance toward policies of great political popularity. For long periods the tradition of economic theory has been opposed to protectionism, minimum wage legislation, price and production controls, and "just" (nonrational) prices. When I say that the policies are hostile to the theory, I mean of course only that the traditional use of the theory led to policy views contrary to those adopted.⁵

⁵ For some remarks on this point, see "The Politics of Political Economists," Q.J.E.-Nov., 1959.

This audience does not need to be told that under these conditions the economists have not simply altered the theory to suit the policy. The policy views of the ruling theory have generally not catered to popularity. The general theory still says that these policies are inefficient and hence undesirable. There are many defenses of these policies by economists, but they are almost invariably antitheoretical: the main theoretical results are repudiated as "unrealistic." The chief effect of continued adversity of policy has been resignation, and it is fair to say that indignation and outrage have disappeared from economics. This is no doubt the reason economics is at the moment highly respectable and—if I may transgress on Professor Wilcox' subject—lacking in promise of basic influence on policy in the future. I do not know whether it is an occasion for pride or for regret that the economist is using Marquis of Queensbury arguments in an arena where emotional brass knuckles continue in fashion.

TTT

On a broad interpretation, the development of related disciplines is also a part of the environment within which economic theory evolves. The influence upon economics of other disciplines is a large subject on which only a few tentative observations can be offered here.

If one were to seek a major economic theory whose existence depended directly and essentially upon prior work in another field, he would find few likely candidates. Putting aside for a moment the methodological fields of statistics and mathematics, there is in fact no important candidate. A theory of behavior, such as our profit maximizing assumption implies, could have come from psychology, but of course it did not. In fact Smith's professional work on psychology (in the *Theory of Moral Sentiments*) bears scarcely any relationship to his economics, and this tradition of independence of economics from psychology has persisted despite continued efforts from Jennings (1855) to Herbert Simon and George Katona to destroy it. Again, the theory of production could be the economist's summary of the technological sciences, but of course it has never been. Economists have produced whatever laws of production they have.

The methodological disciplines are in a different relationship to economics: obviously we use mathematics and statistics with all our might. The effects of methodology, in this instrumental sense, are pervasive: it affects our choice of problems, our methods of analyzing them, and—since a good theory is at least as reliable as a report of facts—our view of the nature of the economic system. It may well be that a superlative algebraist could make better predictions of the future directions of economic theory than any economist. But it may also be

that the algebraist could not: the branches of mathematics seem to have their turns at popularity in economics, and in a longer run may really be servants of the discipline. For surely statistics has had this role: it has had immense influence on the nature of economic investigation but (as yet) almost none on the nature of economic theory. The extensive use of these disciplines in economics, however, still covers too short a period to disentangle relationships from wishes.

The developments in other substantive fields have had a general effect upon what Schumpeter called our "scientific vision." Although we have made frequent verbal use of Darwin's theory, for example, in our economics, we have made almost no substantive use of it, but by analogy it has increased our awareness of the malleability of economic institutions and men (as has Marx's theory of history). The ascendancy of positivism in the natural sciences has had a large effect upon the methodology, and a minor one upon the content, of economics. Most of the effects of these other fields, however, have been subtle and indirect; so it is virtually impossible to point to a single important theory in economics that is plausibly the direct consequence of developments in neighboring fields.

There are many voices that tell us that this is a deplorable state of affairs: that our insularity has kept us from solving many problems (or even seeing them). We are told that political science is obviously important to a study of political economy, that organization and learning theory are essential to (e.g.) a successful theory of oligopoly, that only a sociology of groups can illuminate fully the behavior of labor unions, etc. And how chemistry was revivified by modern physics.

Many of the claims in this direction rest on deep conviction, and the promises of large success support professional position and hopes; so no cavalier comment upon any one would be appropriate. Yet I would emphasize here, as I have with respect to events and policies, the immense degree of autonomy that any successful science must apparently possess. A theory whose continual progress demands the association of very different specialists is outside the historical experience of economics, and—I conjecture—that of other sciences as well.

This autonomy of a science is surely essential to its existence. A discipline which was in intimate and continuous dependence upon the current output of events or other disciplines would simply not be a discipline; it would be a temporary collection of subjects. It could have no specialists—who would be pathetically obsolete in a few years—nor any accumulated theoretical corpus, for its theory would change with each new liaison or external development. It would be, not a science, but an edition of the encyclopedia of knowledge. Why, even its professors could not have tenure!

DISCUSSION

Paul T. Homan: From one so knowledgable as Professor Stigler in the history of economics, we must expect an argument that is persuasive and in large degree conclusive. Within the limits which he sets himself and the conception of "theory" which he adopts, there is little to be said against his central thesis. Calling the roll of the great economic theorists after Ricardo, and particularly after 1870, it is quite evident that their theoretical work was largely directed by "the set of internal values and pressures of the discipline" itself. I am, therefore, prepared to concede him perhaps "93 per cent" accuracy in what he says or what can be read between the lines. My comments, expressing a certain dissatisfaction, must therefore be of a marginal sort, relating partly to emphasis, partly to the nature and role of theory, and partly to the question why historical developments left so little impact on theory.

His general argument is to the effect that the developing corpus of theory has consisted largely of refinements in the answers to questions posed nearly two hundred years ago, and that historical developments and policy problems have had minor effect except insofar as they were pervasive and persistent. This conclusion, apart from the supporting evidence, becomes almost tautological when it is seen to rest on four propositions: (1) that value is "the most pervasive problem of economic life"; (2) that theory, therefore, is primarily the theory of value; (3) that theory is "a statement of general relationships"; and (4) that "the nature of economic systems has changed relatively little since Smith's time." So long as the economic problem is defined as a value problem; so long as the institutional situation is pictured as one of free economic choice; so long as theory is directed to finding the generalized principles of orderly adjustment which hold such a system together-it follows that the value problem in its many ramifications is the only economic problem of significance to economic theorists. By and large, this has been the case, as Professor Stigler states. But this is a fact which itself requires explanation, and partly in historical terms.

First, we must note, shall we call it, the 7 per cent deviation of Professor Stigler from his own thesis. He refers to Ricardo's theory of rent as a case "where the original environmental stimulus to a particular analytical development is fairly clear," covering his defection by referring to its later non-environmental development. This defection could be extended to cover much more that is particularly environmental in the whole classical structure, and only then can we begin to apply the thesis of internal refinement. Perhaps Professor Stigler would have been well advised to point out that the center of theoretical interest was not the same in the classical as in the postclassical period. They were more interested in human destiny than in theoretical refinements, Senior and others to the contrary notwithstanding.

Professor Stigler perhaps covers this apparent defection adequately by

providing a long list of persistent policy problems which have had important theoretical consequences—tariffs, monetary standards, banking structures, monopoly, unions, taxes, business fluctuations, poverty—which have "led to advances in every branch of theory." But by such an assertion he takes much of the sting out of his derisory reference to Professor Mitchell. By the same token he concedes much to Dr. Stark's reference to our sort of economics as "a mirroring of the socioeconomic reality within which it took its origin." One cannot imagine it arising in the Middle Ages or surviving in Communist states. The appropriate environment for generating it was both institutional and intellectual—an environment of increasing freedom of enterprise, of anti-authoritarian political theory, of theories of "natural" order, and of a new conception of scientific generalization. So long as these elements were persistent, as they were, theory cannot be dissociated from environmental and historical factors.

Still, it does require some explaining why, within the context of institutional changes and new problems induced by modern industrialism, theory followed so strait and narrow a course, so largely confining itself to the principles of order within the system. These, it is true, required statement, and we should be so much the more benighted if they had not been stated. But why were trains of economic disaster, conflicts of interest, manifestations of economic power and socioeconomic tensions—together with all economic policies designed to cope with them—so generally reduced to the secondary role of instigating refinements in the pre-existing body of theory? Why was there not more attention to the economic theory of disorder? Why leave that area to socialists, historians, philosophers, humanitarians, and rebels who could be derided for their theoretical ineptness? Why neglect the whole area of the economic potentialities of collective action? Why should "the internal values and pressures of the discipline" all have been dominated by the pursuit of generality and system?

The explanation must surely be sought in historical and environmental terms—in the philosophy of freedom, in the conception of science, in the worship of beautiful theoretical models, in dominant economic attitudes, in the unconscious avoidance of uncomfortable topics potentially damaging to one's status and prospects. Not merely, as Professor Stigler suggests at the end, by the necessity which a scientific discipline has of delimiting its terrain and protecting its autonomy.

This leads me on to a final question, which will also serve as a bridge to my comments on Professor Wilcox's paper. What are we to mean by "theory"? Professor Stigler appears to limit it to the idea of an interlocking, logically consistent set of propositions which, broadly, define an economic system, and, narrowly, have predictive power with respect to particular situations. That we need such systems of theory is not to be seriously questioned, despite their tendency to deteriorate into economic theologies. But the idea of theory as a kit of analytical tools takes in a much wider potential terrain. Our main function as economists, especially in the areas of policy, is analysis in relation to various concrete situations. The analytical or, if you like, "theoretical" equipment necessarily connected with, for example, minimum wages, is some-

thing more than can be derived solely from a "system" of theoretical propositions. The Institutionalist movement was following an important clue on this point, but missed the trail by throwing away its compass—the existing body of theory. Or, to change the metaphor, no one is made more skillful by cutting off his right arm in order to strengthen his left.

Now to Professor Wilcox, "Policy is politics," as Professor Schumpeter used to say. Under this rubric we can accept all the realistic details which Professor Wilcox has set down concerning the political process of policy making. Few economists could speak more expertly on this subject. When, however, he turns to his main topic—the ways in which economic theory may, or does, affect the process—I find myself in some perplexity. The reason is, that the meaning of the term theory, as he uses it, eludes me.

He uses some odd phrases. He speaks of a time when theory "argued against" union power, but later "legitimatized" it. He says that "we have no theory of public expenditures, no rule . . ." for determining their amount or division. He says that there is "no basis in economic theory" for a policy of social insurance. He says that mandatory support of agricultural prices defies "the rules of economics," and many more of similar tenor.

I call such statements odd because, by my lights, economic theory provides no rules, argues against nothing. In relation to policy, theory is purely instrumental. Moreover, the kind of analysis required calls for a knowledge of facts and interrelationships in a higher degree of concreteness than can be contained in any general "system" of theory. That theoretical tools of analysis are essential to intelligent choice is, of course, too obvious to need saying, at least to economists. But economic theory is not the precepts expressed by economists. The value judgments which economists commonly express in policy do, undoubtedly, arise in part from criteria of economic efficiency derived from their study of theory. But their value judgments also arise out of their social environment interpreted through the individual brain and experience, their peculiarity being only that their environment includes a training in theoretical analysis. The passage from analysis to the moral basis of policy is forever a perilous one, and it is not to be expected that, however uniform their theoretical training, economists will always come out on the same shore.

The correct way, I think, to express the nexus of theory with policy is to picture it as highly indirect. If Professor Wilcox would do this, I should have little to say against his statements concerning the value judgments of economists in their relation to the actualities of policy formation. But I am afraid that he has a different view from mine of the prescriptive rights of economic theory. And I am more afraid than he appears to be of the bias introduced into the thinking of economists by their maximizing models.

Theoretical analysis can disassemble the elements of a problem, plot lines of interrelationship, disclose conflicts of interest, and trace out some of the consequences of alternative lines of action. It can obliterate much prejudice, ignorance, and fallacious reasoning. It can facilitate intelligent choice. That is all it can do. It is a great deal.

FRITZ MACHLUP: Judgments concerning the relations between current events, economic theory, and economic policy must depend largely on what is meant by "economic theory." Let me ask six questions about the extension of the term:

- 1. Is economic theory only what "certified" economists—e.g., Ph.D.'s in economics, and fellows, lecturers, and professors of economics—write and teach, or does it also include what persons not so certified write or say about economic relations?
- 2. Is economic theory only what economists generally recognized as economic "theorists" profess, or does it also include what other economists have to say, including those in applied work; e.g., government economists, business economists, trade-union economists?
- 3. Is economic theory only what is accepted as the ruling doctrine, or does it also include what representatives of minority schools or lone dissenters try to get across?
- 4. Is economic theory only what at the time being is recognized as true, or does it also include what was once held to be true and has since been found to be false?
- 5. Is economic theory only what is formulated as an internally consistent system of universal propositions—a comprehensive hypothetico-deductive conceptual scheme of wide, though general, applicability—or does it also include what is expressed in single statements about the regular association or correlation between two classes of events?
- 6. Is economic theory only what can be demonstrated as consistent, valid, and plausible, or does it include any views, however false or naïve, about causes and effects, that are held by influential persons?

If Professors Stigler and Wilcox had chosen the wider, more inclusive, of all these alternatives, they would have had to admit that current events have a great influence upon economic theory—since lots of people talk about them—and that economic theory has an irresistible influence upon economic policy. The latter would be a truism, since those who adopt economic policy must needs have some ideas, however false, about its consequences, and these ideas would constitute economic theory in the wider sense of question No. 6. Needless to say, it would be a waste of time to spell out such tautologies, and Stigler and Wilcox wisely chose the narrower alternative. Let us see whether the exclusive alternatives are also the more appropriate ones to choose in questions Nos. 1 to 5.

No. 1: Only Certified Economists. Limitation to theories produced by academically "certified" economists would surely not be permissible, what with that gifted stockbroker and member of parliament whom many consider as the founder of theoretical economics. But without this limitation, how can we exclude other stock brokers and legislators? Unless we invoke the exclusive provisions of the other alternatives, the pronouncements by many noncertified writers and speakers would pass as economic theory. Should the theories presented by Sylvio Gesell, Major Douglas, Senators LaFollette, Norris, and Wagner, Congressman Patman, Walter Reuther, Roger Blough, Leon Keyserling be regarded as economic theory within the scope of our theme?

If so, Professor Wilcox would have to admit that some of these men had great influence upon policy. Remember the dwindling money of the city of Wörgl, in application of Gesell's theory, and the financial legislation of the Province of Alberta, influenced by Major Douglas' theory. And think of American labor legislation of the thirties, reflecting to no small extent the theoretical views held by trade-union leaders and by Senator Wagner and others in the Congress.

It seems that Stigler and Wilcox were not willing to let the bars down and extend the title of producers of economy theory to writers not recognized as economists.

No. 2: Only Pure Theorists. What about trained and certified economists who neither teach nor write pure theory, but are directly concerned with developing and formulating economic policy? There probably are hundreds of government economists in the United States who have influenced economic policy at closest range. In the area of monetary policy the influence of Parker Willis was quite apparent in the early years of the Federal Reserve System, as was later the influence of Goldenweiser, and of Lauchlin Currie, and in recent years the influence of Winfield Riefler and Robert Roosa. Informed people could surely supply similar lists for several other areas of governmental economic policy.

Wilcox apparently did not wish to include specialists of this sort among economic theorists, or their views as economic theory. If he had, he would have had to admit a much greater influence of theory upon policy than he did in this paper. The division between the applied economist and the theorist was clearly in his mind; for example, when he said that the "policy-maker . . . will frequently face problems with which the theorist has never dealt . . . [and] he cannot wait until the theorist catches up." Since the applied economist must surely have some theory, however crude, behind his recommendations or decisions, the exclusion of his kind of reasoning from the definition of theory must be on grounds of a narrow choice either on question No. 2—that he is not really a "theorist"—or on question No. 5—that his theory is not deducible from a comprehensive theoretical system.

Stigler, likewise, excludes the applied economists and the piecemeal theorists from the legitimate producers of economic theory. He stresses the "scholarly, and usually academic, orientations towards economics" and he asks us to "please notice that I distinguish economic theory from discussion by economists, and deal only with the former."

No. 3: Only Ruling Theory. Only "ruling" theory is accorded the title of economic theory by the authors of the two papers. Wilcox shows that "tariff policy in the United States . . . ran counter to generally accepted doctrine," although he admits that "protectionism had its theoretical defenders." Again, he states that "economic opinion is virtually unanimous in opposing retention of the statutory ceiling on interest on long-term bonds, but congressmen . . . refuse to change the law." I am sure there must be somewhere "theoretical defenders" of the statutory ceiling, but they are not respectable enough to get their views accepted as economic theory.

Stigler likewise excludes the unruly ideas of some political economists

favoring unsound policies: "Economic theory often takes a hostile stance toward policies of great political popularity.... The policy views of the ruling theory have generally not catered to popularity. The general theory still says that these policies are inefficient and hence undesirable. There are many defenses of these policies by economists, but they are almost invariably antitheoretical: the main theoretical results are repudiated as 'unrealistic.'"

- No. 4: Only Contemporary Theory. If Wilcox concludes that the influence of economic theory upon economic policy has been relatively slight, he apparently thinks only of contemporary theory, not of theory professed some time past. Yet it is exactly the theory of previous years which J. M. Keynes has credited with great influence upon policy—especially the theory taught at colleges when the legislators and men of affairs were studying. Wilcox does not attempt to test or to illustrate this opinion.
- No. 5: Only Comprehensive Theoretical Systems. In developed sciences a distinction is made between an internally consistent theoretical system on the one hand and independent empirical generalizations on the other. Stigler apparently refers exclusively to the former when he speaks of "economic theory" and denies the environmental influences upon the development of theory. Thus he talks about "general theory" and "important, basic theory and its basic development."

Whether Wilcox is just as exclusive on this point is not certain, but rather likely. For example, he speaks of the high level of abstraction, of elaborate models, of seemingly remote contact with reality—all of which is true of theoretical systems, not of simple empirical generalizations associating two classes of events.

The exclusion of such piecemeal generalizations serves as a good substitute for the exclusions on the first two counts: if one hesitates to be snooty vis-à-vis nonprofessional economists (such as stockbrokers and legislators) and vis-à-vis specialists in applied economics (such as government economists), one may disqualify their pronouncements as economic theory on the ground that such conclusions cannot be deduced from a complete theoretical system.

I have discussed these exclusions from the body of economic theory, not in criticism of the two papers, but in order to bring out what was implicit there—and partly explicit. The exclusions may be needed for meaningful answers to the question of the relationships between events, theory, and policy.

Both papers deal extensively with the ineffectiveness of theory in shaping policy, especially where the conclusions of the theorists run counter to organized political interests. This conflict is chiefly a matter of value judgments about transitional effects and about the welfare of members of special groups compared with the welfare of unidentified consumers. If the theorist were given the assignment to analyze only the short-run effects of certain measures upon specified groups of people, his findings would probably be the same as those of advocates of special interest. But since the theorist must concern himself with longer run effects—and especially with effects upon society as a whole—his conclusions are opposed by pressure groups and, also, by politicians who have a sincere interest in the well-being of their constituents,

known to them by name or at least by affiliation, but care less, if at all, about consumers whom they do not know, who are not organized, and most of whom may even reside in another voting district or state. The charges of "unrealism" which politicians level against economic theory stem less from its technical language or from its esoteric assumptions than, I submit, from its concern with total strangers, somewhere, sometime, and its disregard of "my good friends" here and now.

The largely negative conclusions of Stigler's concerning the influence of events upon theory and of Wilcox's concerning the influence of theory upon policy are not apodictic but allow of exceptions. I should like to point to an area in which these influences, in my opinion, have been quite distinct: monetary experiences, theory, and policy. Compare the emphasis of monetary theory in Britain and the United States, on the one hand, and in Germany and Austria, on the other; you will notice that the former is distinctly more antideflationary and the latter more anti-inflationary. I submit that the experiences with galloping inflations in Germany and Austria have influenced theorists in these countries to place major emphasis on the disastrous effects of inflation, whereas British and American theorists, evidently swayed by their recollections of the deflation of the thirties, stress chiefly the intolerable effects of deflation. And I submit, furthermore, that under the influence of the respective theories, avoidance of inflation is the primary goal of German and Austrian monetary policy while avoidance of deflation is the first concern of policy in the U.K. and the U.S.A.

JOSEPH J. SPENGLER: I find myself in general agreement with Professor Stigler's main conclusions. These conclusions seem to run about as follows: (1) not every major economic development shapes economic theory: (2) not every major theoretical contribution or concern is a response to contemporaneously important external events; (3) it is essential though not always sufficient that an economic problem, or issue in the realm of economic policy, possess the attributes of importance, persistence, and widespreadness of incidence if it is to evoke enough theoretical interest to help give shape to the content of economic theory; (4) humanitarian propensities are unfavorable rather than favorable to the development of economic theory; (5) as economic science matured and achieved autonomy, it became less sensitive to the impact of events in the empirical world; (6) as a result of its early acquired maturity and autonomy, economic theory, together with its course of development, underwent and continues to undergo little modification in consequence of changes taking place in neighboring fields (e.g., psychology and political science); (7) in the future such contact as the economic theorist has with economic events will be increasingly at second hand, through the medium of data collected and organized by empirical research economists.

These conclusions, if valid, are of considerable significance for foundation executives and economic educators. They suggest that foundation executives are misguided when they place heavy emphasis upon the immediate and the problem-oriented. They suggest that educators may contribute more effectively to the development of economics and economists through the support of

theoretical and tool courses suited to the analysis of carefully assembled data than through that of courses with a strong empirical orientation.

Despite my general agreement with Professor Stigler's conclusions, I believe that further inquiry is indicated before we can fully accept them. There are several possible approaches. One might, for example, attempt to order the sciences in terms of the imperviousness of their courses of theoretical development to the incidence of relevant external events or influences. If mathematics is describable as a science, it would certainly be situated at the pole of extreme imperviousness. Nearest the opposite pole would be situated the less theoretical of the social sciences, such as political science and history. Comparative analysis might then disclose the qualities of a science primarily responsible for its position on this continuum, among them the degree of maturity and autonomy attained by each of the sciences ordered. This mode of approach would be the long way around, and is hardly possible, given the state of the data.

Another approach would entail incremental analysis of the development of economics itself, particularly of economics since it achieved a stable and comparatively autonomous form in the eighteenth century. Such an approach would permit a more careful distribution of incremental changes in the content of economic theory between those which are properly describable as immanent and those which are describable as responses to change in the external environment of the science of economics. Only incremental analysis—given that it is pursuable—seems suited to such a sequestration; when the degrees of change dealt with are larger than incremental, they are likely to take on the coloration of immanent even though they represent responses to changes in the external environment.

One may conceive of economics as a kind of organism, or as the possession of a collection of professional custodians, either of which functions and develops in an environment to changes in which it can seldom be wholly impervious. How this body, or this collection of custodians, responds at any time to an external stimulus will depend upon its state, or degree of maturity, at that time. With the acquisition of maturity is associated selectivity, and this selectivity will neutralize many stimuli, but it will not be capable of neutralizing or disregarding all stimuli. At most, therefore, the acquisition of maturity will augment the relative importance of the role of immanent development, but it can never make it the exclusive source of theoretical progress. One might well argue that in the absence of external stimuli, the immanent source of change would exhaust itself and economic theory would become frozen.

One could make a strong case for the proposition that in the absence of the stimulus of persisting external problems, the potential of a theoretical insight might continue undeveloped; this amounts to a corollary to the third of Professor Stigler's findings if it is not merely another form of the finding itself. One may turn for illustration to a field of statistics now of major concern to economists; namely, that of sampling. The use of samples is not new; it found expression already in the eighteenth century and much more frequently in the nineteenth century. Moreover, the basis of sampling theory existed already near the beginning of the nineteenth century. And yet sampling did not really

come into its own until recently, under the pressure of need, especially in American governmental circles, for policy and related purposes. External pressure therefore played a considerable role in the development of applied sampling even though immanent forces played an important role in the development of the theory itself, and the nature of the response that this pressure could generate was conditioned by the state of sampling theory at the time the pressure was exerted.

One might also argue that how economists envisage the economy may be considerably influenced by external theoretical developments. For example, formation of the conception of the economy as a system of interrelated variables must have been assisted by developments in the theory of equations. Similarly, attempts to account for the behavior of economic phenomena in stochastic terms, whether well founded or not, have been assisted if not stimulated by developments outside the realm of economics.

In sum, while I agree with Professor Stigler's findings as set down and while I believe what I have just said to be in keeping with his findings, I conclude that we can accurately assess the impact of external events upon the development of economic theory only insofar as we can and do carry out our analysis at the incremental level.

¹ E.g., see Frederick F. Stephan, "History of the Uses of Modern Sampling Procedures," J. of A.S.A., Mar., 1948, pp. 12-39.

INCENTIVES AND ECONOMIC GROWTH: CHANGING ROLES AND PUBLIC POLICIES

INCENTIVES IN THE UNITED STATES

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Incentives are the prizes in the game of life—the goals individuals seek—the carrots. Through the ages of Tutankhamen, Alexander, Caesar, Louis XIV, and the Atom, they have remained the same. Men want, and have always wanted, exorbitant wealth, tyrannical power, idolatrous prestige, lavish consumption, and undisciplined leisure. And the men of Kharkov and Karachi are not different from the men of Kalamazoo. The specific objects of wealth or power may differ between Kalamazoo and Kharkov. But if Kalamazoo teems with thieves and brigands while Karachi is serenely industrious, the explanation lies not in differences in goals. Differences in goals will not explain differences in the way individuals pursue their goals.

What does explain the disparities? Differences in the relations between costs and goals. It is trite, but nonetheless important, that there is not enough wealth, power, prestige, etc., to go around. As all economists are aware, this scarcity becomes evident as costs. In seeking prizes, individuals must make sacrifices; for example, they must forego leisure or forego consumption. The existence of costs is universal—once again whether it be Kharkov, Karachi, or Kalamazoo. But the specific relations between costs and goals differ from place to place and from era to era. An hour of foregone leisure will not yield the same reward in Karachi as in Kharkov or Kalamazoo. There are two reasons for this. First, the technological circumstances—the resources and knowledge—are different. Second, the rules of the game—the mores and laws—that condition the hunt are different. The observed relation between cost and rewards—the relation that the contestants see—is a product of these two sets of factors. The technological circumstances imply a basic relation which in turn is conditioned by the rules of the game.

Observed cost-reward relationships are important because they gov-

ern individual behavior. Contestants perceive the schedules of prizes and costs and adapt accordingly. If the road to riches is dishonesty and deception, dishonesty and deception will flourish. If the state levies taxes on incomes, people will take more leisure. If the tax is limited to money incomes, the do-it-yourself club will flourish. If the tax exempts income from owner-occupied housing, the ranks of proud homeowners will swell. If corporate risk sharing is more efficient, the corporate organization will flourish.

But in trying to improve their lot individuals do more than merely adapt to given cost-reward relationships. They try to alter the schedule of prizes and costs to their own advantage. How? By changing the rules, especially through government. By pressing for advantageous legislative, administrative, or judicial action, individuals can and do use the power of government for personal gain. Thus economists describe the effects of reduced demand for an industry's product in terms of a new equilibrium with lower prices and lower output. But in a society where government can be summoned to the aid of distressed suppliers, that description is incomplete. For the industry may induce government to artificially maintain demand or subsidize losses.

Constitutional government is an attempt to limit this prerogative; but constitutional limitations are not and cannot be immutable. Even if legislative amendments were prohibited, experience suggests that *de facto* limitations are at the mercy of the courts which themselves adapt to social pressures. Of course, to get favorable changes in rules, individuals must incur costs. And the extent to which people attempt to change rules depends on the relation between the costs of changing rules and the potential rewards.

During the twentieth century a number of developments in the U.S., such as the growth of corporations, technical progress, and urbanization, have had important effects on cost-rewards relationships, including the costs of changing the rules. But to us the one that overshadows all others in significance is the growth of government activity.

During the past sixty years, a dramatic metamorphosis has taken place in the role of government in the United States. By any standard, there has been an astonishing expansion, not only of the federal government, but of all governments during the twentieth century. To quote Solomon Fabricant, in *Trend of Government Activity Since 1900* (NBER, 1952): "In 1900 one out of 24 workers was on a government payroll, in 1920 one out of 15, and in 1940 one out of 11. The current ratio . . . is one out of 8. The trend is sharp and clear." (Page 14.) "Today government holds 20 per cent of the nation's capital assets (exclusive of roads and streets and most military and naval equipment) not 7 per cent as in 1900." (Page 9.) "The sixfold rise in government

employment between 1900 and 1949, and the similar increase in capital assets, great as they are, understate the rise in total volume of resources used in producing government services. . . . The physical volume of goods and services purchased by government from private industry went up more than a thousand per cent between 1903 and 1949." (Pages 24-25.)

The facts disclosed by Fabricant, striking as they are, tell only part of the whole story. Transfer payments are not included. These were about 12 billion dollars in 1949, or 6 per cent of individual income compared to less than 1 per cent in 1900. (*Ibid.*, page 9.) Furthermore, Fabricant's data do not reflect the growth in government during the last ten years. Expenditures of government have doubled since 1949, the year on which his statements were based. Today they are about 30 per cent of gross national product.

National defense accounts for a significant part, but by no means all, of this increase. In 1903 defense expenditures were 10 per cent of total government expenditures. Today they are on the order of 35 per cent. In 1900 there was no Old Age and Survivors Insurance, no Old Age Assistance program, no unemployment compensation, no Commodity Credit Corporation, no Federal Housing Administration, no urban renewal program, and no Reclamation Bureau.

Growth in expenditures is only one facet of the expansion of government. Important transformations have also occurred in regulation and control. The twentieth century has witnessed the birth and growth of the Securities and Exchange Commission, the Federal Communications Commission, the Federal Aviation Agency, the Federal Reserve Board, the Federal Deposit Insurance Corporation, the National Labor Relations Board, and minimum wage and hours laws. At state and local levels, planning and zoning commissions, building codes, public health regulations, and licensing have proliferated.

The fact of large government growth or change itself does not justify our concentration on this change. If the increased importance of the corporate structure or of urbanization or of complexity of modern technology were even more spectacular, we would still emphasize government activity. Increased corporate activity, greater urbanization, and increased complexity do not reduce the role of the market place or private property as institutions through which individual wealth, prestige, consumption, or leisure are determined. But the growth in government that has taken place does have that effect. Government as a taxer, a spender, an employer, and a regulator supplants the market

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¹ Including military assistance, stockpiling, NASA, and the lion's share of AEC expenditures. See *Trends in Public Expenditures in the Next Decade*, by Otto Eckstein, CED Supplementary Paper, April, 1959.

place and private property, thereby changing patterns of individual behavior. Standards of behavior required in the market place lose viability with the expanded role of government.

Public Finance and Incentives

The wherewithal to support governments in the U.S. comes mostly from taxes on individual income, corporate income, sales, and property, and from miscellaneous excise taxes. All of these have important effects on cost-reward relationships. Even if tax laws were in a sense ideal, taxes would alter basic cost-reward relationships. Individual income taxes inevitably alter the rewards for foregone leisure. Corporate income taxes increase the cost of doing business as a corporation vis-à-vis alternative organizational forms. Sales taxes increase consumption costs relative to holding wealth. And so on!

But in practice the laws are not ideal. As we have noted, most home produced income, to the delight of farmers, is not taxed as individual income. Income from owner-occupied dwellings is largely exempted. Income spent on interest, charity, medical services, and employment fringe benefits is largely exempt. Co-operatives and so-called "nonprofit corporations" are exempted from corporate income taxes. Depletion provisions make the rate on extractive industries less than on other industries. Income taken in the course of conducting business—private airplanes, private cars, pretty secretaries, and thick rugs—is exempt from individual and corporate taxes. Certain forms of consumption, e.g., eating at home, are often exempt from sales taxes. The property tax turns out to be largely a tax on land and buildings.

In 1900, when government was small, such tax provisions would have been of little consequence. Government being what it is today, however, the effects are by no means trivial. Cost-reward relationships are effectively rewritten, and the contestants must revamp their style of play accordingly.

Government expenditures also affect basic cost-reward relationships. Farm price supports, various "low-cost" lending schemes, water, power, and reclamation projects, and postal subsidies to publishers and advertisers are some obvious examples. Unemployment insurance alters the rewards in seasonal industries. Old Age and Survivors Insurance penalizes employment after age sixty-five.

To economists these kinds of individual adaptation to taxes and expenditures are a familiar subject, and we need not dwell on them further.

Incentives Within Government

When government employs a significant fraction of the wealth and of the labor force and buys an even greater share of the output, cost-

reward relationships within government deserve attention. The prizes for various forms of behavior in government are markedly different from private markets. Private firms buy inputs and sell outputs, and the test of survival is the relation between the value of the two. Government buys inputs, but the inputs are paid for by levying taxes, while output is given away. The problem is identical with the familiar problem of divergence between private and social costs. Once tax receipts reach the Treasury, they are owned by no one. To the individuals entrusted with their expenditure, the costs of using these funds is not equal to their value. They are not required as a condition of survival to see that value of output exceeds the value of inputs.

Specific cost-reward relationships in government employment reflect these circumstances. The bulk of government employees fall into three categories: employees under civil service or merit systems; teachers; and military personnel. In all of these cases, seniority is the key to success and a premium is placed on job security. These systems owe their origin and survival to the fact that private and social costs diverge in government. Civil service and merit systems originated as answers to the spoils system. Why should government be marked with the spoils system? Why should politicians hire and promote unqualified people? Because the cost to them of doing so is not equal to the social cost (which, incidentally, is to not say that civil service is any improvement). Elaborate procedures to ensure competitive bidding are another device conceived as an answer to the same problem.

Incentives and Government Regulation

Regulation is still another government activity affecting rewards and associated costs. The spectrum of government regulation runs from national minimum wage and hour laws to licensing itinerant fruit dealers. Frequently regulation confers valuable privileges on selected groups of individuals. Licensing of banks, insurance companies, security dealers, radio and television stations, airlines, taxicabs, and doctors are examples. Sometimes the valuable privilege consists of nothing more than the right to operate a monopoly, as is in the case of medicine and taxicabs. Other times a scarce resource is given away, as in the case of radio, television, and airlines. Frequently, a government agency is interposed between the consumer and the producer with the power to decide which producers are acceptable. An applicant producer must not only show that customers demand the service he proposes to offer. but must also satisfy whatever other criteria the regulatory agency adopts; e.g., that he is of good character. In technical terms, the money price of licenses is raised to infinity by legal prohibition of purchase; consequently, other kinds of activity that lead to obtaining a license

become more rewarding. The reward for favorable personal impressions on the regulatory agency has increased. Statesmanship, conformity, sociability, prestige, political influence, civic-mindedness, and the like replace money as means to rewards. Where a monopoly is granted, as in medicine, constant vigilance is required against interlopers. Both the public and the politicians must be convinced in perpetuity that the monopoly is in their interest. Again statesmanship, conformity, sociability, prestige, political influence, etc., take on added importance.

Where valuable privileges are conferred, profit regulations are often imposed. Public utilities and nonprofit corporations are privately owned but profit restricted. Since the restriction takes the form of some percentage of investment (zero in the case of nonprofit firms), the firms actually operate on a cost-plus basis. What is restricted is only the money profits that can be taken out of the business. Potential profits can be turned to personal gain, however, by disguising them as costs. The cost of rewards taken in the form of business-connected purchases has gone down. Thick rugs, pleasant offices and colleagues, and even such seemingly mysterious activities as community affairs participation by officials, support of charity, and extensive fringe benefits become sensible.

Incentives to Political Action

A striking change in public attitudes toward the role of government has attended government expansion in the twentieth century, as Solomon Fabricant notes:

President Cleveland had vetoed an appropriation of \$25,000 to buy seed corn for Texas farmers ruined by a drought. Even a democratic President, vetoing the appropriation . . . could state "I can find no warrant for such an appropriation in the Constitution, and I do not believe that the power and duty of the general government ought to be extended to the relief of individual suffering which is in no manner related to the public service or benefit. A prevalent tendency to disregard the limited mission of this power and duty should, I think, be steadfastly resisted, to the end that the lesson should be constantly enforced that, though the people support the government, the government should not support the people."

That the above statement, which was made in his first term, was not "political suicide" is about as eloquent a testimonial to the change in attitude as one could find. The change is not a change in the ends for which men strive; i.e., wealth, power, and prestige. It is a change in the relation between costs and rewards for political action. Nineteenth-century attitudes severely proscribed the use of the state as a means to individual ends. The twentieth century has seen this proscription eroded away. Behavior which society formerly held to be unacceptable has become standard practice.

² Cleveland's statement is from *The Writings and Speeches of Grover Cleveland*, Veto of the Texas Seed Bill, Feb. 16, 1887, edited by G. F. Parker (Cassel Pub. Co., 1892).

The change in attitude toward the role of government has increased rewards for exerting organized political pressure—not only to recognized types of union and industry groups, but to doctors, teachers, fishermen, golfers, senior citizens, parents, et al. The services of professional lobbyists, public relations experts, and lawyers are more rewarding. Mass communication media—radio, television, newspapers, and magazines—are more earnestly courted because of their influence and power. Contributions of time and money to political campaigns have larger pay-offs. These are kinds of behavior that are efficient in bringing about changes in the rules of the game.

If it appears that we are pointing a fickle finger at government, the impression is correct. If it appears that this is also a condemnation, that impression, too, is correct. But the condemnation does not derive from the economic analysis. For the analysis merely identifies the changes in cost-reward relationships over the last half-century, and develops the implications for individual behavior. It is an ethical judgment that leads us to condemn the kinds of behavior that this has induced. And it is on the basis of an empirical judgment that we assert that cost-reward relationships have changed, not goals or incentives.

SOVIET GROWTH: ROUTINE, INERTIA, AND PRESSURE

By Gregory Grossman University of California, Berkeley

One might rightly ask whether a paper on the Soviet Union belongs on this program. The phrase "incentives and economic growth" evokes the image of a market economy with a multitude of autonomous decision-making units whose initiative and active participation in saving, investment, the acquisition of skills, and innovation is to be elicited. True, the government itself may be an investor and entrepreneur, in addition to setting the politico-economic climate for its citizens or even influencing them more directly. But even with this qualification, the image is not applicable to the USSR, where the market mechanism as well as any significant measure of autonomy of investment decision was deliberately abandoned at the dawn of the Plan Era. Yet although our market-bound image vanishes as we turn to the Soviet scene, the elements of our problem clearly remain. Where there is growth there must be initiative somewhere and there must be participation of some sort by the economic units. And where the executants are at some remove from the source of the initiative, the channels of its transmission, the response of the executants, and the incentives for compliance are of considerable importance. These are the aspects of Soviet economic growth that I should like to inquire into here.

There can be little argument about the locus of the initiative and drive for economic expansion in the Soviet case; it has been from the start and continues to be the country's political leadership. Nor need we for present purposes identify the historical, ideological, or psychological roots of this dynamism. A dictatorial polity, a totalitarian society, a virtually wholly state-owned, centrally planned, and centrally managed economy—the specific institutional setting of industrialization in the Soviet Union is well known. However, one Soviet organizational innovation has not, it seems to me, received its due share of attention. This is the transformation of the process of economic growth, and of industrialization especially, into a routine bureaucratic procedure—the routinization of economic growth. It does not mean, of course, that the

¹Hirsch, from whom I borrow the phrase (which in the original reads routinemässige Dynamisierung der Wirtschaft), emphasizes a somewhat different aspect of the "routinization of economic growth"; namely, the periodic tightening of "norms" in order to spread throughout the economy (or industry) the more "advanced" productivity achievements (see Hans Hirsch, "Mengenplanung und Preisplanung in der Sowjetunion," Kyklos [Basel] and J. C. B. Mohr [Tübingen], 1957, pp. 14-17). Seen from the firm's level, this is of course the "ratchet principle" discussed by Joseph S. Berliner, Factory and Manager in the USSR (Cambridge, Mass., 1957), p. 78.

growth process is smooth, timely, and efficient (not to say rendered painless for the society). It does mean that the various components of the growth process—extraction of the agricultural surplus, diversion of a large part of resources to investment, financial controls to avoid inflation and to thwart the misdirection of funds, concerted takeover of technology, research and development, training of manpower, dissemination of information, laying down of what the Soviets call "technological policy," the planning of expansion for individual sectors and industries, the designation of investment objects, the designing of the plant ("project making"), the approval of projects and their financing, the work of construction and the allocation of materials thereto, and so forth—are subject to established, standard procedures and methods of a bureaucratic character, which are essentially repeated from object to object, year to year, and quinquennium to quinquennium. In other words. Soviet economic growth is routinized in the same sense in which the drafting of the U.S. budget is routinized.

Once established (and given a firm hand at the top, on which more below), this routine grinds out economic growth at a fairly steady, if not altogether constant, rate. (With only minor modification it also grinds out military strength.) The early years were the hard ones, requiring as they did the establishing of control over agricultural output through the traumatic collectivization campaign, control of the population while consumption levels dropped sharply and social tensions increased, the restraining of inflation, the mutual articulation of the various cogs in the bureaucratic apparatus, etc. After this "hump" is passed and experience is gained, the very fact that the routine can be made to yield an annual dividend to the consumer lightens the political burden for the regime, while the accumulation of instrumental goods and of skills eases the economic problems. But at the same time—as technology becomes more sophisticated, and as the number of firms, and especially of their interconnections, multiplies rapidly—success itself presents central planning with increasingly exacting tests.

The difficulty with a bureaucratic routine is that it tends to be "bureaucratic" (in the pejorative sense) and to be strongly biased against anything outside the routine. The Soviet press abounds in illustrations on both scores; there is no need to cite any here. Further, economic expansion by means of a bureaucratic routine implies certain principles of selectivity and priority. It militates against "equating of margins" along a broad front, great variety of dynamic endeavor, flexibility in innovation, and adequate attention to interstitial problems. (But those lines of endeavor which command the regime's attention and gain the necessary priority of effort can be expeditiously and lavishly undertaken, and of course if successful can be paraded as typical

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achievements of the system. Yet, the economy's loss is that much greater if the favored projects prove to have been unwise; Soviet history is full of such examples; e.g., the gigantomania of the thirties, Stalin's "plan for the transformation of nature," emphasis on large crawler tractors in agriculture, concentration of cement production in a small number of large plants leading to excessive transport costs. and—lately criticized by Khrushchev2—predilection for huge and costly hydroelectric power stations.)

The reduction of economic growth to a bureaucratic routine must not be taken to mean that the efficient, novel, and daring is automatically and systematically brought into being. On the contrary, the essence of routine is repetition, and repetition favors the familiar and conservative. "Bureaucratism" can turn the routine into a "rut." Hence the paradox that the very economy whose dynamism has been second to none in the modern world is plagued by a strong and widespread resistance to the introduction of new products and techniques. In its unceasing condemnation of inertia, red tape, conservatism, timidity, and so-called "anti-mechanizational attitudes" the regime provides ample proof of the prevalence and seriousness of the problem. One cannot escape the impression that the regime's extreme and unremitting pressure from above to overcome the resistance from below has been an indispensable factor in the rapid technological and economic advance of the Soviet economy.

This is not the place to inquire at length into the nature and causes of this resistance, but essentially the reasons are simple, At bottom lies the drive for rapid industrialization itself, which led to the establishment of a centrally-managed economy ("command economy") and, in the absence of market criteria, the imposition of certain "success indicators" for the evaluation of the performance of management and. by reflection, of superior entities as well. Because of the constant drive for greater output and the obsessive fear of less-than-full utilization of capacity, foremost among the success indicators has been fulfillment of the production plan in physical terms and in value (at constant prices). Somewhat less important but still not insignificant have been the unit cost target and certain partial input-use norms. Generous bonuses, sometimes amounting to several times the basic salary, are paid to the managerial personnel for good performance in terms of these criteria, not to mention honors and promotion. At the same time, consistent failure to meet the production targets (and, to a lesser extent, the cost target) is sure to lead to unpleasantness, if not worse. The

² Pravda, Aug. 11, 1958; English translation in The Current Digest of the Soviet Press (hereafter cited as CDSP), Vol. X, No. 32. For Khrushchev's further comments on the subject see Pravda, Dec. 13, 1959.

³ For a general discussion see Alec Nove, "The Problem of 'Success Indicators' in Soviet Industry," Economica, Feb., 1958, pp. 1-13.

managers' reaction is just what we would expect; anything that upsets the established production routine in any way endangers plan fulfillment and therefore tends to be vigorously resisted. A speaker at the May, 1955, industrial conference put it succinctly: "Any smoothly running production process is by its very nature conservative." The resistance extends to the workers—prodded by their wives, according to one source5—who risk losing their steeply graduated piecework bonuses while the production process is being revamped.

In brief, as the incentives and sanctions are now structured, there is little reason for those involved in production, aside from sheer patriotism or professional pride (and these may be substantial), to introduce new products or technical methods, and there is often substantial personal material risk involved in doing so, not to say frustration in the face of the bureaucratic leviathan. We should note that two of the most powerful forces making for innovation and modernization of products and processes in the market economy are virtually entirely lacking in the Soviet-type system; namely, the force of competition and the sales efforts of firms in the capital goods producing industry (including the various service activities related thereto). More than that: insofar as the capital goods industry itself is prey to the same tendencies—and the Soviet press is full of complaints that machine-building enterprises insist on continuing to produce antiquated equipment rather than run the risks of modernizing their products—its behavior contributes to the forces that inhibit innovation and retard the progress of production techniques.

The professional values and aspirations of the inventors and designing engineers thus tend to clash with those of the producers, a conflict that has been documented in innumerable factual accounts in the Soviet press⁷ and is the theme of many fictional works (of which Dudintsey's much-publicized *Not by Bread Alone* is only one example). Shades of Veblen, his critique of the captains of industry, and his Soviet of Technicians, in the Land of the Soviets forty years later! Only in this case it is "the engineers and the success-indicator system." These problems have led a jurist, A. I. Omel'chenko, to advance8 a bold scheme to accord legal protection to what he calls "creative risk"; i.e.,

**Partiinaia zhizn', 1959:21, p. 65.

It may be noted that, in general, Soviet firms are indifferent to the uses to which their

⁴ Novyi mir, 1955:7, p. 23.

products are put, and devote very little research to this end.

One of the most forceful and vivid factual accounts is O. Antonov, "Pochemu novaia tekhnika vnedriaetsia s boem?" ("Why is New Technology Being Introduced Only with a Battle?") (Znamia, 1957:2, pp. 148-155; CDSP, IX:16.) For drawing my attention to this and other references, as well as for valuable ideas on the subject, I am indebted to a report on "The Policy of Technological Progress in the Soviet Union," by Mrs. Rita Falk Taubenfeld in my seminar.

⁸A. I. Omel'chenko, *Tvorcheskii risk, i ego gosudarstvenno-pravovaia okhrana* ("Creative Risk and Its Legal and Administrative Protection") (Moscow, 1955).

the risk incurred by the enterprise and its personnel because of innovation or the introduction of technological improvements which are in the society's interests. He has proposed that after the motives of the parties are investigated, those guilty of "bureaucratism and procrastination" in the examination of inventions, technical improvements, and rationalizing suggestions, or of refusal to introduce them on grounds of risk or alleged lack of economic advantage, be subject to criminal prosecution. At the same time the state would establish a special fund to underwrite creative risk in those instances where the economic unit cannot afford to bear it. The legal and actuarial difficulties, if not the utter impracticability, of realizing Omel'chenko's scheme, are of course quite evident, but its very proposal throws light on the nature of the problem.

To the regime, the widespread resistance to the introduction of new techniques and products is not only a manifestation of opposition to, even defiance of, its will, but also a serious obstacle in the self-proclaimed economic and technical race against the "capitalist world." Its spokesmen express great concern at virtually every appropriate occasion. Since the war, for instance, all three party congresses and nearly every session of the Central Committee plenum and the Supreme Soviet (insofar as the transactions of these bodies are published) heard vigorous condemnations of the resistance to new techniques and products, and repeated exhortations for compliance and initiative in this respect. More concretely, the regime has been resorting to a variety of organizational devices and incentive measures to overcome the resistance.

Three phases stand out in this connection in the postwar period. The first began at the end of 1947—a time when, we may recall, Soviet industry was close to recovering its 1940 production level, and the cold war had already reached a high degree of intensity. In December of that year a State Committee on New Technology (Gostekhnika) was created to supervise and stir technical progress in the Soviet economy. (It absorbed Gosplan's Division of Technology, the Commission on Invention and Discoveries, the Commission on Standards, and the Technical Council on Mechanization of Heavy and Labor-Intensive Jobs.) Beginning with 1948, the annual economic plan has included targets for the introduction of what in the USSR is called "new technology," specified by individual projects and branches of the economy. Soon thereafter, about 1950, labor policy followed suit, and a campaign to encourage "innovationism" (novatorstvo) among the rank and file was launched. The novator now became the model worker, as the Stakhanovite had been at an earlier stage of Soviet industrialization; emphasis thus shifted from individual heroic production feats to rationalization of technique.

For reasons unknown in February, 1951, Gostekhnika was abolished, to be revived in May, 1955, at a time of thorough re-examination of the performance of Soviet industry and of its organizational structure. Only a couple of weeks earlier the aforementioned all-union industrial conference took place, at which vigorous criticism of virtually every aspect of industrial performance was voiced. The managers present at the conference campaigned for greater managerial autonomy, but were not successful. The regime was more interested in making management behave within the existing and highly centralized framework than in granting enterprises greater leeway. The Central Committee resolution of two months later (July 11, 1955), which followed a special report to it by Bulganin on the course of technical progress in industry, was a conventional compendium of condemnation, exhortation, and enumeration of specific technical projects to be pursued.9 The ensuing decree on "the enlargement of the powers of industrial managers" (August 9, 1955) lived up neither to the managers' aspirations nor to its own title; the "enlargement" of managerial powers permitted by it was minuscule. And indeed, in the view of some competent observers even the radical reorganization of industrial administration that was to follow two years later was largely a "conservative" measure aiming at forestalling the delegation of greater powers to enterprises.¹⁰

Yet the events of mid-1955 did serve to bring into focus the fact that those immediately concerned with innovation and modernization enjoyed few if any material dividends from the results of their socially useful activity, while at the same time incurring substantial material risks for themselves. The governments responded in a fairly orthodox way; namely, by offering appropriate material incentives. In June, 1956, the Council of Ministers approved a "standard statute" for the machine-building industries which provides for bonuses to engineering and managerial personnel for the design and introduction of "new technology," (The aim was probably not only to reward managerial personnel for innovating behavior but also to encourage the creative engineers to make common cause with the regime in the struggle against managerial conservatism.) However, a notable and novel feature of the measure—and incidentally an important sign of the growing appreciation of economic criteria in decisions pertaining to growth—was the tying of the size of the bonus to the anticipated annual economic gain from the introduction of the "new technology." In addition, in 1957,

⁹ For the conference see *Pravda*, May 17-22, 1955 (CDSP, VII:20 and 21), and Novyi mir, 1955:7, pp. 3-38. For Bulganin's report and the Central Committee resolution thereon see *Pravda*, July 13 and 17 (CDSP, VII:26 and 28).

¹⁰ See, for example, Oleg Hoeffding, "The Soviet Industrial Reorganization of 1957," A.E.A. Papers and Proceedings, May, 1959, pp. 65-77.

¹¹ With regard to this measure, and some (critical) reactions to its operation, see the following: *Promyshlenno-ekonomicheskaia gazeta*, Feb. 20, 1957, Mar. 24, 1957, Aug. 19,

a system of bonuses for fulfilling and overfulfilling the enterprise's production plan with respect to new articles was introduced: "However, this system is so structured that it is easier and more advantageous for the enterprise to overfulfill by several percentage points the plan for old, familiar products than to commit itself to the production of new products. It is no accident that certain plants . . . do not use this system at all."12

The tying of rewards to the economic effect of new technology seems to have had one interesting and important repercussion. It has forced attention to the calculation of economic advantage in a socialist setting, and thus seems to have given a direct push to the resolution of the longsmoldering controversy on the "effectiveness of investment" in the Soviet economy.¹³ On August 1, 1956, Gostekhnika issued "provisional instructions for the determination of the economic effect of new technology" for use in connection with the computation of bonuses. This document took a relatively "rationalist" stand with regard to the formal recognition of capital scarcity in economic calculation—something that the guardians of orthodox Soviet doctrine had been resisting for many years. It may well be that the "provisional instructions" forced the issue and contributed to the convening in Tune, 1959, of a full-dress conference on the calculation of "investment effectiveness," at which the "rationalists" emerged overwhelmingly victorious. 4 If so, this is probably not the first time in Soviet history that significant doctrinal issues have been brought to a head by administrative problems—in this case the need to reward useful innovation.

The latest phase in the regime's struggle against resistance to innovation in products and techniques may be dated from the formation of a State Committee on Automation and Machine-building in the spring of 1959. Established presumably in response to certain problems raised by the administrative dispersal of machine-building plants among the sovnarkhozy (on which more presently), this latest of high-level state committees for individual branches of industry is charged with assuring uniform technological policy in machine-building, planning the direction of technological advance in this branch, spurring automation, coordinating research and development, and so forth.¹⁵ The division of

^{1959,} Oct. 11, 1959, Oct. 18, 1959; Pravda, Sept. 2, 1956, April 12, 1957; Voprosy ekonomiki, 1959:6, pp. 14-21 and 1959:7, pp. 29-31.

¹² Voprosy ekonomiki, 1959: 6, p. 15. ¹³ A historical sketch and discussion of the controversy can be found in my "Scarce Capital and Soviet Doctrine," Q.J.E., Aug., 1953, pp. 311-43.

¹⁴ Voprosy ekonomiki, 1958:9, pp. 119-62 (English translation in Problems of Economics,

Vol. I, No. 9, pp. 68-90).

¹⁵ A. Kostousov (chairman of the S.C. for A. and M.), "Nazrevshie voprosy razvitiia mashinostroeniia" ("Urgent Problems of the Development of Machine-building"), Kommunist, 1959:8, pp. 11-21; idem, Pravda, Aug. 28, 1959.

functions and authority between it, the sovnarkhozy, Gostekhnika, and Gosplan is not at all clear. But the creation of this body unmistakably reflects the regime's profound concern with the advance of technology, and especially its application to production, in the context of the race to overtake the United States in less than a decade—a race proclaimed at the very time when, because of severe limitations on bringing additional manpower into industry, the bulk of industrial growth must be accounted for by sharply rising labor productivity; i.e., by very rapid modernization and automation of production facilities.

The high point of this concern was expressed at the June, 1959, plenum of the Central Committee, convened expressly to examine the pace of technical progress. ¹⁶ Its resolution attacks the problem along a broader front than did similar documents previously. While providing for no significant organizational reforms, it does call for reconsideration and strengthening of personal material rewards for the development and introduction of new products and techniques, re-examination of the system of financing innovation and modernization, and reform of price policy with respect to new equipment. The plenum was followed by an extraordinary patriotic appeal to the country at large to force the pace of technical progress couched in terms usually reserved for major national emergencies—a telling indication of the seriousness with which the leadership views the problem.

It is as yet too early to assess the results of the June Plenum. But one of its consequences bears special mention: the unusually broad mobilization, even for the USSR, of a large variety of professional and official bodies, and of what might be called the "active public" (obshchestvennost'), to uncover instances of indifference or opposition to technical progress, and to force a more attentive and compliant attitude on the enterprises. The republican Scientific and Technological Commissions; the "technical-economic councils" of the sovnarkhozy; "technical committees" (composed of specialists and organized after the June Plenum) and "permanent production conferences" (which include also representatives of the rank and file) at individual enterprises; local soviets; local chapters of professional societies; those typically Soviet entities, local "societies of inventors and rationalizers"; Komsomol "light cavalry"; and finally, and probably foremost, the expressly created "committees for party control over management" at primary party organizations—these are only some of the official and "public" bodies charged with inquiring continuously into technical matters at individual enterprises.¹⁷ One is led to wonder whether the turning

¹⁶ Pravda, June 25-July 3, 1959 (CDSP, XI:26, 27, 28).
¹⁷ On "public" control see Pravda, June 30 (Khrushchev's speech at the Plenum), July 13, Aug. 21, Oct. 25, 1959; "Promyshlenno-ekonomicheskaia gazeta," Mar. 26, 1958,

of "the application of new technology in production" into (almost literally) everybody's business is compatible with the state of the technical arts and production organization in the middle of the twentieth century. At the very least, managerial authority would seem to be substantially diluted thereby. Perhaps the resort to such methods on an unprecedentedly wide scale is a measure at once of the exasperation of the regime with the conservatism of the bulk of the enterprises, and of the earnestness with which it views its economic and technological challenge to America.

A few words about the chain of command and the channels through which the pressure from above is transmitted. The change-over in the middle of 1957 from a "branch" principle of industrial administration through ministries and glavki to territorial administration through regional economic councils (sovnarkhozy) may have important implications in this respect. Before July, 1957, the various growth-inducing establishments such as research institutes, project-making organizations, training schools, construction enterprises, and the like, were subordinated to ministries or otherwse organized along branch lines. The lines of communication within the ministerial structure were used to transmit not only current commands but also orders and information of a growth- and progress-inducing nature; e.g., to introduce new products and processes or to reduce unit costs. Now the old branch lines of communication have been severed. Many of the growth-inducing establishments have been dispersed among the 104 regions and cannot communicate with or serve the respective industries as effectively as before (although others have been attached to Gosplan, the various state committees, and other central bodies). The new system of organization and communication would thus seem to be less well designed to transmit downward the pressure and the information that are so important to Soviet economic growth, and to innovational activity in particular. It would also seem that the sovnarkhoz, concerned as it is with a score of two different branches of industry, is less well attuned than were the old ministries to problems of technical and economic progress in the individual industries. Indeed, some responsible Soviet spokesmen showed awareness of this danger from the start.¹⁸ The creation of new central branch-wide bodies, primarily in the form of state committees, for the co-ordination of research and technological policy in the

graficheskii otchet (Moscow, 1957), pp. 249-54.

Sept. 2, Sept. 27, and Oct. 21, 1959; Zheleznodorozhnyi transport, 1959:10, pp. 3-7; Nauchno-tekhnicheskie obshchestva SSSR, 1959:10, passim; Kommunist, 1959:12, pp. 48-57; Partiinaia zhizn', 1958:13, pp. 15-21, 1959:13, pp. 23-27 and 31-36, 1959:17, pp. 9-15, 23-42, 1959:21, pp. 16-20; Akademiia obshchestvennykh nauk pri TsK KPSS, Iz opyta raboty sovnarkhozov (Moscow, 1959), pp. 191 ff.

28 E.g., I. P. Bardin speaking at the seventh session of the Supreme Soviet (1957). (Zasedaniia Verkhovnogo soveta SSSR chetvertogo sozyva [sed'maia sessiia].) Stenovas (Abshi) setat (Moscow, 1957), pp. 240-54

most dynamic areas of Soviet industry is aimed at overcoming these difficulties in communication; yet it also seems to raise significant jurisdictional problems. Perhaps the greater use of the "public" to spur progress in production techniques is also a response to some of the problems raised by the transition from ministries to regions.

Many factors have contributed to the outstanding technological progress of the Soviet Union: the thirst for education and knowledge among the country's youth; the small but able nucleus of scientists and engineers inherited from the Empire and the standards of excellence bequeathed by them; substantial amount of direct foreign technical tutelage; the boundless reservoir of Western technology and science waiting to be drawn upon. Also significant has been the peculiar combination of, on one hand, what Nicolas Berdvaev has called the "Americanization of the Russian people," on the other hand, the fact that to the Russians of the first decades of the Soviet era (also in his words) "technical undertakings are not the ordinary, matter-of-fact customary affairs that they are to Western people; they have been given a mystic character and linked on with plans for an almost cosmic revolution."19 But foremost on such a list must be the single-minded and ruthless determination of the Soviet regime to win the historic race through industrial might and technological excellence, and its relentless, unceasing pressure through every possible channel to hasten the advance in production techniques, especially in the favored branches of the economy. To us, knowing virtually no such pressure on the part of the state and regarding progress in the practical arts as essentially a private matter, this all-permeating and all-energizing pressure in the Soviet society is striking, if not shocking, to behold.

True, as a percipient student of the Soviet society has observed, this method of progress harbors a "very serious flaw": 20

The drive for industrial expansion [in the USSR] comes almost wholly from the top. Of itself the Soviet economic system does not generate the ruthless energy that has made the USSR a first-class industrial power. . . The Communist elite is . . . a substitute for the adventurous spirit that has built the great industrial and financial empires of the Western world. . . Within the Communist Party itself, it now seems that most of this dynamic pressure comes from the top downward. Should the political source of industrial expansion vanish or decline, there is nothing in sight to take its place. . . . Stagnation . . appears built into the structure of the Soviet economy and lies continually just beneath its surface. So far it has not been permitted to develop because of the dynamic leadership at the center. If this factor changes, the entire machine could conceivably grind to a stand-still at a level unsuited to the role of a world power.

Nothing in this essay so far contradicts the gist of Barrington Moore's observation. It is indeed quite probable that should the pressure from above melt away, other things remaining the same, Soviet technological advance would suffer greatly. Economic growth would

Nicolas Berdyaev, The Origin of Russian Communism (London, 1948), p. 142.
 Barrington Moore, Jr., Terror and Progress USSR (Cambridge, Mass., 1954), p. 71.

INCENTIVES IN UNDERDEVELOPED ECONOMIES

By Simon Rottenberg University of Chicago

A good deal of the literature on the international distribution of poverty says that people do not move among employments in accordance with the principle of equal advantage, so that advantage is not equal at the margin in all employments: there are too many in some industries and too few in others, and stable equilibrium is achieved at less than maximum output for given resources.

I shall ask three questions: What is the meaning of nonresponse to incentives and what are the analytical consequences of nonresponse? And what is the empirical evidence of incentive response behavior in the poor countries?

Ι

The processes of adjustment that are said to prevail in what are variously called the rich, developed, advanced, or industrial countries are well known. Suppose an economy in stable equilibrium. Let the structures of taste or technology change and the real yield on capital and reward to effort rise for a time in the industry which the community desires to expand. Some resources move toward this industry and away from others. More resources in the expanding industry cause yields and rewards to fall there; fewer resources in the contracting industries cause yields and rewards to rise in them. When capital and effort of given quality have the same remuneration everywhere in the economy equilibrium is restored and the industrial distribution of resources is that which is appropriate to the maximization of output by the economy.

Dynamic processes are similar. With given time-preference functions, changes in interest rates signal the rate at which capital will be formed.

It is often forgotten by outsiders to economics that the static equilibrium case does not define the differences in remuneration that will be paid for effort of different quality. It does not say how much more flagpole painters must be paid than common laborers in order to produce the number of flagpole painters the community wants. Nor is the magnitude of difference defined for the period in which the economy adjusts to taste and technique changes.

In what sense is it said that the poor countries are different from the rich? Three categories of observed phenomena are reported:

First, it is said, there is sometimes zero response to price incentives; supplies of capital and effort to some employment are infinitely inelastic; however much real prices rise in this employment, no additional supplies will be forthcoming.

Secondly, it is said, there is sometimes a negatively sloping supply curve to some employment; incumbents in an industry respond to price incentives by diminishing output and this negative increment is not canceled by new entrants attracted by higher real prices.

Thirdly, it is said, there is sometimes a positive but relatively inelastic supply curve to some employment and the ordinates of the points for some occupations that will attract the least reluctant person to the relevant occupations are much larger than those for other occupations, so that higher real prices will indeed draw resources to some given industry; but they will do so only sluggishly and given quantitative increments in supply or the attraction of any supply at all to the industry require large real price increases.

These behavioral phenomena are reported to have been observed by practitioners of the sister disciplines of economics among the social sciences and by economists, as well. Indeed, the observation is not of recent origin. One can find it, for example, in Walter Bagehot's the Postulates of English Political Economy which reprints two papers he published in the Fortnightly Review in 1876 and appears with an approving preface written by Alfred Marshall. In the Postulates, Bagehot says:

I propose to take the principal assumptions of Political Economy one by one, and to show . . . where each is true and where it is not. . . .

The first assumption is that . . . labor and capital circulate readily within the limits of a nation from employment to employment, leaving that in which the remuneration is smaller and going to that in which it is greater. . . .

If you take at random a country in history, the immense chances are that you will find this tendency either to be altogether absent, or not at all to prevail as it does with us now. The primary assumption of our Political Economy is not true everywhere and always, but only in a few places and a few times.

He then proceeds to cite the then-known literature descriptive of primitive and village societies to prove the case for the widespread existence of supply inelasticities.

He was wrong, I think, in concluding that economics as an analytical engine was relevant only to societies of "grown-up competitive commerce, such as we have in England." He should have known better. He had read and, indeed, reviewed, when a younger man, John Stuart Mill's *Principles*, which was first published in 1848. Mill had already distinguished cases of differential supply elasticities and had analyzed values with reference to these differentials and, on this, there were others who anteceded Mill. Thus, economics is analytically relevant to the inelastic cases—"wines that can be grown only in peculiar cir-

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cumstances of soil, climate, and exposure . . . and ancient sculptures, pictures by old masters, rare books or coins"—as well as the elastic cases—"cottons, woolens, or linens [that] might be produced by thousands of yards for every single yard now manufactured." But this is a methodological question which is distinct from another which is closer to the subject of this paper.

This "closer" question has to do with the facet of economics which defines the conditions for the achievement of welfare optima. Is welfare adversely affected, if, in some society, supply schedules are price inelastic?

Assume a two-industry economy in which there is zero response to price incentives. People are distributed in some fashion between employments A and B; tastes change and real wages rise in A; but people do not move from B to A, say because moving will require them to leave the bosom of their families or the haven of their village. None will move and a wage differential of any magnitude will induce no one to move. The supply of effort to A and B is perfectly inelastic.

We shall assume that the decision whether to move or stay is not random and that some quantity is maximized in choosing. This quantity consists, in every case and in every economy, of a basket of incentives, each of which has a subjective value assigned to it. In the perfectly price-inelastic case, the value of one, or several, or all taken together, of the non-price incentives in the basket has an infinite value. It is not exactly correct to say that people in this economy do not respond to price incentives. A better expression of the phenomenon is that the magnitude of the price difference is not (in the hypothetical case, cannot be) large enough to cause movement to occur. No one, in any economy, responds exclusively to income incentives and it is because there are differences among individuals with respect to the subjective values they put upon the non-price component of their incentive-baskets that supply curves to an employment are not perfectly elastic.

In the hypothetical case of perfect inelasticity of supply, price changes signal the desirability of movement between employments, but response does not occur. What does "desirability" mean? It means that the income of the community, as conventionally measured, would be greater, if movement occurred, so that more is produced of the product of one industry and less of the product of the other.

But conventionally-measured income is not the whole measure of welfare. Suppose a rule which said that a specified proportion of persons in employment B shall be forcibly removed to employment A, when A's wage is twice that of B. Since we have hypothecated that a difference of even infinite magnitude would not induce voluntary movement, a 100 per cent increase in remuneration is not sufficient to rec-

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ompense the welfare loss produced by movement. A policy of forceable removal, therefore, causes income to increase but welfare to diminish. This is equivalent to saying that the introduction of elasticity into supply schedules by force techniques compels behavior that increases income but diminishes welfare. The problem really is one of our capacity to measure. Some things are amenable to the measuring rod of money and others are not. When a person chooses an employment and "pays" effort, he receives in exchange an income, in the form of some quantity of goods and services or money with which he can claim goods and services, and another "income" in form of some degree of satisfaction of tastes for cleanliness, security, etc. Everyone wants more of all things -more money income and more of whatever nonpecuniary quantities that have a positive value for him (thus, less of whatever nonpecuniary quantities to which he assigns a negative value). But money and nonmoney are competitive with one another. If he has more of one, it is at the cost of less of the other. This can be clearly seen if we postulate that total income decomposes into only two parts: goods and services and leisure. A community that values leisure highly will be prepared to pay a high price for it in goods and services foregone. Its income, conventionally measured, will be less, other things being equal, than the income of a community that puts a lower value on leisure and is willing to forego only a smaller quantity of goods and services for the acquisition of some quantity of it.

Now leisure is not the only nonpecuniary quantity that competes with goods and services; their number is myriad. Each chooses that employment, among alternatives, which equates at the margin the utility derived from each component of the incentives in his basket; that is, he maximizes his total income. It is only because we are able to measure the goods-and-services part of his income, but not the taste-satisfying part, that we say income will be larger if supply schedules are not perfectly inelastic than if they are.

This is also true where elasticity is greater than zero. Suppose, in an agricultural, tribal, or village society new resources are discovered, say copper, and that copper mine owners offer wages for work in the mines which are superior to earnings in the agricultural sector. The output of the economy will increase if there is some movement of resources from the agricultural to the mining sector. Assume two alternative supply curves of labor to the copper industry. On one, some quantity of labor will be called forth for the mines by the payment of only a 20 per cent premium over agricultural earnings, because people value goods and services much and the satisfactions derived from continued living with the tribe little. On the other, the same quantity of labor will not be attracted to the mines unless copper wages

are twice earnings in agriculture, because people value goods and services little and the utility of tribal life much.

It is clear that income, as conventionally measured, will be larger where the real cost of goods and services is small than where it is large; just as income will be larger if mineral ores lie close to the surface than if they must be more and more deeply dug for. But it is also clear that total income which is the sum of goods and services and of such other things as, for example, the convenience of living among one's tribal fellows need not be larger in the one than the other. Since we cannot measure the value of the intangible component of income, we cannot say whether in a total welfare sense communities we call poor are really poorer than those we call rich.

If man is an economizer, it means only that he moves resources among uses on the principle of equimarginal return. But this tells nothing of the quantities in each use; it does not say how much fish and how much meat Crusoe will consume. Just so, it does not say how much income and how much nonincome people will consume in any economy. It only says that they will choose such that welfare is maximized.

We have been saying that a community is better off in a goods-andservice income sense if the utility functions of its members are such as to cause supply schedules to be relatively elastic to price.

The forces of competition diminish inefficiency in the economy by causing resources to be put to uses among alternatives that produce the highest yield. If some who command resources are inefficient, competitive incumbents in the industry and competitive new entrants drive the inefficient to the bankruptcy courts and compel them to give up their resources to others who will put them to better use. If the resources would yield a higher product in other industries, they are bid away to other uses. If these processes operate, income from given resources is maximized. But they will operate only if there is competition in the economy. Higher yielding uses must be prepared to bid. If they do not bid because people are sealed off in noncompeting boxes and all resources are specialized to the industry in which they are currently located and will not move because the real cost of movement is very high, resources will not be optimally allocated and income will not be maximized. Thus in two societies, in one of which resources move fluidly among uses and in the other only sluggishly or not at all, the first will be better off in a goods-and-service income sense. This is true, if movement is impeded by laws which compel resource-use patterns different from those that would prevail if owners of property and labor services were free to determine their use; it will also be true if the impediments are imposed by customary constraints that have

achieved the consent of community consensus; and it will be true if each disposes freely of his own resources but chooses, except in circumstances that only rarely occur, not to move resources among employments.

A caveat needs to be entered here.

There is, in fact, a case to be made for some degree of inelasticity in the economy. If the incentive-basket of every person contained real prices in different employments and nothing else, there would be clearly too much movement, for then very small real price changes would occasion very large movements. Everyone would be forever in fluid transition among employments and there would be no stability in the economy. There is some virtue in stickiness.

Thus, even on a conventionally-measured income criterion instantaneous and massive flows of resources among industries in response to miniscule changes in real yields would be undesirable, for then everything would be always in flux, resources would be fixed nowhere, and everything would be always between industries and nothing ever in any of them. What is wanted is marginal response to price incentives, but only marginal response; it is, however, difficult to define the numbers who are optimally just at the margin and, indeed, the conditions which determine optimal numbers.

I propose to pass now to an examination of empirical experience.

II

Milton Friedman has suggested that we should expect the following differential empirical consequences of different degrees of elasticity of supply schedules. If the schedules are very inelastic, the shifting of demand will cause relative renumeration among employments to change much and relative numbers in different employments to change little. Correspondingly, if supply schedules are very elastic, the shifting of demand will cause relative renumeration to change little and relative numbers to change much.

Not very much is known about occupational or industrial wage structures in the poor countries but the little evidence that is available seems to exhibit the same patterns as those that prevail in the richer countries. This is comparative stability in relative wages and comparative instability in numbers engaged in different employments and these results are consistent with elastic supply schedules and inconsistent with inelastic supply schedules.

There is evidence of other kinds which seems to indicate that people in the poor countries are not so unresponsive to income incentives as they are often said to be.

Many of the governments of these countries have now had long

experience with the administration of economic policy. The record of the administration of tax, tariff, and exchange policies, to mention only a few, is of mountainous proportions. This record is an unstable one; initial rules have been repeatedly amended and refined and the reason for this is, I think, clear. Let a rule be established in these countries that inhibits gainful behavior, and those upon whom the constraints are imposed begin to devise strategies of evasion. Let them be successful; the rule is refined to close the gap, and this produces amended evasive strategies. Life in many of the poor countries is a game of cat and mouse between governments and those who pursue higher yields for assets and effort. People do not conspire in cafes to no purpose. It is a game that is ubiquitous and it involves evasion strategies that are enormously ingenious. Perhaps one illustration will suffice. It is said that a firm imported a quantity of left shoes into one port of a South American country and a quantity of right shoes into another port. It did not claim either shipment at the piers and the customs office took possession and arranged to sell at auction. The firm was the only bidder for the left shoes—for who would want left shoes, if he did not have the matching rights—and it bid them in at a nominal price. Likewise the firm was the only bidder for the right shoes and it got these, too, at a nominal price. In this way, it evaded the payment of customs duties on the imports.

It does not matter whether the tale is true or not. It suffices that all of us who have visited some of the poor countries have been told of similar episodes. Clearly this is information of some merit as evidence that the pursuit of income is active in the poor countries and that people there are not completely unresponsive to income incentives.

The sometime lack of confidence in official foreign trade statistics is of a piece with the foregoing. Some of the poor countries have established differential prices for foreign exchange, depending upon the use to which the exchange is to be put or the source from which it is derived. Thus exchange to be used for importing "necessities" is sold more cheaply than exchange to be used for importing "luxuries." Or exchange produced by exporting goods in respect to which the exporting country adopts a monopoly posture is bought more cheaply than exchange produced by other transactions.

In these cases there has been a rash of falsification of shipping documents so that goods are not recorded by their true identities and invoice under- or overvaluation occurs. Thus international trade statistics are not completely to be trusted and this is another piece of evidence that income incentives produce response.

If people did not respond to these incentives, would we have queues forming when maximum price controls are put on urban transportation and bank credit? Would we have building starts fall off when maximum controls are put on house rents? Would a tax cause escape to untaxed substitutes and a subsidy a flow of resources to subsidized industries? Would the contraband trades prosper? Do we not observe these phenomena to occur in poor countries as well as rich?

Let us move now to another evidential front. When legal impediments are not put in their way, people move among countries. Often the distances between points of origin and destination of these migratory movements are large as are the real and money costs of movement. These are not random movements, but, in net terms, the flows are from low- to high-income places. Very low-income people from very traditional societies—those who are said to be least responsive to income incentives—have participated in these international migrations. We should expect, of course, that it would be the poor rather than the rich who would disproportionately seek opportunity elsewhere, but only if they are income-responsive. If we observe highland Scotsmen, southern Italians, Indian villagers and Mexicans pursuing fortune in places at some considerable distance from their homelands, we should surely put to question the notion that poor people are bound by tradition and that the real price to them of acquiring extra increments of goods and services is so high that they prefer to forego them.

The foregoing comments indicate that there is a great deal of empirical evidence that is consistent with the hypothesis that supply schedules in the "backward" countries have a positive elasticity, although it does not permit us to measure its magnitude nor to establish definitive comparisons with the more "advanced" countries. But it is worth something to be able to say that the real cost of acquiring more income is not so large as the common mythology of behavior in the poor countries asserts it to be.

Nor is this the end of the evidence. The relative growth of cities in the world points in the same direction. The cities have grown in size, absolutely only in the smaller part by net positive rates of natural growth; net migration to them from rural areas and villages is the more important cause. And in those countries in which natural rates of growth are higher in rural than urban areas, the whole cause of the relative growth of cities is the net migration to them from the rural countryside. If we add to this information the datum that money earnings are almost everywhere higher in city employments than rural employments, we have, again, villagers who are responsive to income incentives.

Or we might examine the consequences of restrictive foreign trade policies. In how many poor countries is it not true that a prohibitive tariff on the importation of luxuries causes internal resources to move among industries such that domestic industries producing substitutes for the prohibited imports expand relatively?

Or see what happens when the real prices of some commodity rise. Let the United States put a floor under cotton prices and output expands in Central and South America and the Middle East. Let Brazil build its inventories of coffee and hold its stock off the market or dump it into the sea, and see if in Angola, the Congo, French West Africa, Ruanda, and Uganda people do not respond to market signals to plant additional trees.

Or let prices fall. Let Lancashire and Birmingham cotton goods enter India and see if resources do not flow out of the Indian handicraft textile trades. Let the Chinese retail trader penetrate other Asian countries and impute a low value to his own labor services and see if natives of the country do not move to other employments.

On what then is the beast fed? If so much experience in the world is consistent with the hypothesis that the "backward" people put values on goods and services, on the one hand, and on the costs of acquiring them, on the other, such that income-incentives do achieve response, why is it said so often that they do not respond. I think the answer is that there is some evidence on the other side, but that wrong inferences have been derived by overweighting some evidence and underweighting other evidence; that there are impatient people who expect long-run phenomena to make themselves manifest in the short run; and that there has been misinterpretation of the evidence.

To begin with, the costs of any employment will be relevant to employment choices in all economies, rich and poor alike, as has been discussed in the first part of this paper. If a Western European is asked to accept a position in a region where he runs a certain risk of contracting malaria or trachoma, he will exact a premium to secure his consent. If he is asked to leave the bosom of his family or to accept insecure employment, he must be paid for it.

Just so, the Javanese are profoundly attached to their villages; the Kenyan was unwilling to work on the white farms in the highlands; the Nuba farmer of the Sudan is reluctant to grow cotton "if his pockets are already full"; the Malayan peasant and fisherman has a high preference for leisure and independence; in those parts of Africa which first experienced disciplined work under slavery, free employment under European supervision was held in low repute; and caste-vocational proscriptions in India inhibited movement among employments, as did customary rules defining work appropriate to each class among the Kikuyu.

But one does not really say very much about comparative response to income incentives in poor and rich countries by cataloguing non-

income quantities. They are found everywhere and among all people. In addition, observers have not been willing to wait for tendencies to work themselves out in the economy. Consider for example the phenomenon of the aggregate backward sloping supply curve that has been said to be found in many places. When relative price rises for the product of an industry, it is said, the output of the industry declines. Incumbents in the industry buy more leisure, as their incomes rise, and their output falls, and the backward turn for incumbents in the industry buy more leisure, as their incomes rise, and their output falls, and the backward turn for incumbents is not canceled by new entrants attracted from other industries. But this result implies that occurrences that provoke incumbent response do not provoke outsider response. For a negative slope for incumbents means that they do respond to income incentives, albeit perversely, and it may be that observed negative aggregate sloping are only transitional phenomena for periods not long enough for new entrants to make their way into the industry.

The alleged unwillingness of African tribesmen to accept employment by Europeans is another case in point. To secure their consent to work, it is alleged, it was necessary to levy head or hut taxes payable in a currency that could only be earned by working for Europeans. But these taxes were imposed by governments in countries in which Europeans monopolized power and the taxes could be expected to shift the supply curve of labor to European employments to the right and cause given quantities of labor to be supplied at lower prices. Perhaps the taxes should be interpreted as devices for cheapening the cost of labor to European employers rather than compelling it to come into existence at all.

Now let us assume, for argument's sake, that the mean real cost of an additional increment of goods-and-service income is higher in the poor than in the rich countries. What policy is appropriate to the goal of increasing income? A government that sought to serve such goals ought to permit competition to prevail in the economy. If there are some for whom the rules of the game inhibit gainful behavior, because they value the esteem of their fellows and are prepared to sacrifice income for it and, if, to possess this esteem, they must refrain from price-cutting tactics, they should not be permitted to use the coercive power of the state to impose these preferences upon others who are prepared to cut prices. For if they are, goods-and-service income will be less than otherwise. Low-cost producers will not be permitted to bid resources away from their higher cost colleagues; the owners of these resources will receive a smaller remuneration for them; and welfare will be reduced, at least for those whose gainful

behavior is constrained, because they will be compelled to accept, and act upon, criteria derived from someone else's preference schedules. Thus, governments that apply "saturation" principles which prohibit additional investment in any industry which is already "satisfying the market" are surely following a wrong policy—except in the narrow case in which it seeks to organize the distribution of income and welfare such that incumbents in any industry who highly value their fellows' esteem shall gain at the expense of the rest of the community.

One can go a bit further than this and say even that a government which seeks to maximize income will put no legal barrier in the way of the free entry of immigrants. For among them the mean cost of gainful behavior will be lower than among the resident population; nonpecuniary constraints on the pursuit of income that have their origin in custom will leave them unaffected. They, therefore, will incur smaller costs for the acquisition of an increment of income of given magnitude and a much smaller change in real returns to assets and effort will attract a larger proportional supply from them than from older residents. They will respond to income incentives as far as their tastes will carry them while the older residents do the same.

One need only look at the "good works" done by those peripatetic marginal people—the Chinese, the Indian, the Arab, and the Jew—to observe the fruitfulness of the policy of the open door.

Thus, if in any country there is a class of income-maximizers and a class of maximizers of other quantities who are constrained by rules that inhibit income-maximizing behavior, the policy that is appropriate to income maximization is one that permits the former freely to pursue their own advantage.

DISCUSSION

Joseph S. Berliner: Our panel is concerned with incentives and economic growth in different cultural contexts. Although the authors of necessity approach their subjects somewhat differently, there is an interesting common theme, about which I should like to organize my remarks. Indeed, our panel might be subtitled, "Three Papers in Search of Economic Man," or, "Variations on a Theme by Mandeville."

In the paper on incentives in underdeveloped countries the author examines the assertion that in those countries people do not respond to income incentives. He shows that the statement is only partly true, but to the extent that it is true it clearly bears upon economic growth. For if people do not strive to maximize income (that is, if they are not Economic Men), clearly there can be no maximization of economic welfare. How then shall we handle such people? Since behavior is surely not random, runs the argument, they must be maximizing something. The author proposes to restore order in phenomena by reformulating the behavioral postulate thus: they maximize a basket of incentives, only one of which is income. This is a sort of Meta-economic Man; like our classical Economic Man he does maximize something, but unlike the former, what he maximizes is a whole variety of things.

This formulation undoubtedly generalizes our old behavioral postulate in a way that would meet the criticism of sociologists and anthropologists. It satisfies our understanding that real men live for more than bread alone. But in achieving greater generality, we lose, I fear, all meaning. The great value of our old behavioral postulate of income maximization is precisely that we could find people who do not act that way. It is, in other words, capable of disproof. This is a virtue that was never quite understood by our colleagues in other behavioral sciences. But the assumption of Meta-economic Man can never be disproved; no matter what behavior we observe, it can always be explained by saying that the subject is maximizing some combination of income plus what?—social stability, tribal organization and polygamous marriage? Since Economic Man is operational, it is capable of generating meaningful propositions; if he is an entrepreneur he equates marginal cost and marginal revenue. But if he is a Meta-economic Man, what behavioral propositions can we deduce? They would have to read something like the equating of marginal polygamy with marginal tribal stability. In short, we gain nothing by rejecting our old formulation of Economic Man. If we are ever to achieve a true generality in our treatment of economic behavior in cross-cultural settings, it will not come, I suspect, from a simple extension of our traditional economic tools. It will require an altogether new set of concepts. I doubt that the concept of maximization will be one of them.

The foregoing attempt to generalize our classical behavioral postulate is modest compared to that of the authors of the paper on incentives in the United States. They assure us at the outset that from the age of Tutankhamen to the age of the Atom—one might say from Adam to the Atom—incentives

have remained the same. It is only the technology and the rules of the game that have changed. I am not prepared to contest this cosmic generalization, not because I believe it, but because I could not possibly disprove it. Show me the most selfless and altruistic act of any man at any time, and I can always assert that it was really done for prestige or for power or for ego gratification or for something else. The fat bourgeois buying and selling in the market is responding to the same incentives as the Sun Priest preparing for the sacrifice of the virgins. Only the technological conditions and the mores are different. They are both, in the words of our authors, contestants perceiving schedules of prizes and costs and adapting accordingly. This comes perilously close to the solemn assertion that people do what they do because they want to do it. My objection is the same as that raised against the Meta-economic Man; namely, whatever its undeniable merits for organizing our thoughts, it is quite nonoperational and incapable of generating verifiable propositions. We are on surer ground if we retain our modest but firm concept of Economic Man monotonously maximizing only income.

It often happens in the history of scholarship that people grow enamored of the object of their investigations. Geneticists take a kindly view of Drosophila, and nuclear physicists are rather fond, I suspect, of mushrooms. So our authors have grown fond of our economists' heritage, Economic Man. I would not mention the point except that it plays a rather central role in the development of their argument; for they tell us that the tone of their paper is based on an ethical judgment and their prescription for public policy must be evaluated in those terms.

The authors document the increasing intrusion of government into economic life. I am sure they could have found, if they tried, some ways in which this was a Good Thing, but they choose to dwell on the ways in which it is a Bad Thing. One of the condemned consequences is the increasing extent to which economic decisions are made by what we might call Government Man, as contrasted with Economic Man. One major distinction between these two abstractions is this: Economic Man must pass the quantitative test of survival that the value of outputs must exceed the value of inputs; but since Government Man gives away outputs, there is no such quantitative test of survival. I do not dispute this description. I understand that this technical fact, the unquantifiability of many government services, influences the way in which we analyze phenomena, but I fail to see how it leads to any value judgment about the worth of government services, or of the incentives of governmental personnel. To be consistent, our authors would have to take the same position with respect to art, education, religion, and all phases of life in which the outputs are incommensurable with the inputs. Even odder is the view that the incentives of persons engaged in such pursuits are in some sense less worthy than the incentives of persons who deal in dollars and cents. Surely in our fascination with the quantitative niceness of the market place, we ought not undervalue the qualitative side of life. Moreover, I am prepared to assert as an ethical proposition—for it is an ethical judgment that our authors present us with—that the quality of things contributes more to our welfare than the quantity of things. Thus one good book is better than many bad ones, though

it may contribute less to the national product. I come, therefore, to the opposite conclusion from our authors: the one whose concern is ideally the public interest, Government Man, is not less worthy than the one whose concern is ideally his private interest, Economic Man. If this is so, then the technical unquantifiability of Government Man's output, however irritating to the economist, should play no role in our prescriptions for public policy.

If we face a problem of nonoperationalism in dealing with incentives in the underdeveloped countries and the United States, we find quite the opposite in dealing with incentives in the USSR. The Soviet leaders may perhaps have their own ideas about baskets of incentives or about the basic goals of men, but in dealing with the concrete facts of economic life they focus their attention on such mundane matters as income. It is rather interesting to note that in the USSR, of all places, income maximization is one of the central incentives of economic behavior. The assumption that Soviet managers maximize income—that they act like Economic Man, in other words—proves to be a highly fruitful principle with which to explain observed behavior. As our author points out, the state relies on money bonuses to channel managers' efforts in desired directions. In attacking the problem of resistance to innovation which itself can be largely explained by income considerations—the regime has turned again to special bonuses for innovation. Only two weeks ago, according to the press, the regime launched a new drive to focus managerial attention on cost reduction, and the incentive selected for achieving this end is the bonus.

The Soviets have solved the problem of economic development in two ways. They have created a machinery for channeling a large part of the national product into growth-inducing investment, by what our author calls the "routinization of economic growth." But more than that, they have also instilled into the population a tender fondness for income—a fondness so strong that the government is able to manipulate its people by the granting of income here or the denial of it there. They have brought into existence a race of true Economic Men—socialist in form perhaps, but largely bourgeois in content.

BENJAMIN HIGGINS: I find myself once again in the position of having to say that I agree with the major conclusions of the paper assigned to me for discussion but mistrust the method by which they were reached. In essence, this method is the application to economic development of the analytical devices of comparative statics and the policy criteria of welfare economics. I consider this approach inappropriate for analyzing economic development and believe that it can lead to correct policy conclusions only when these are fairly obvious at the outset.

I agree that economists have for a long time recognized the existence, especially in less industrialized societies, of categories of behavior that are analytically inconvenient. My own favorite among our intellectual ancestors is Malthus. His astute observations regarding the causes of underdevelopment in Latin America, his use of two-sector models to analyze them, and his understanding of the "population explosion" endemic in the early stages of industrialization add up to something very close to the modern theory of under-

development. I also join Dr. Rottenberg in insisting that the observed differences in behavior patterns do not mean that economics as an analytical engine is useless in underdeveloped countries (or regions); they mean only that the engine must be adapted to the task at hand.

So far as his major conclusion is concerned—that income incentives operate just as strongly in underdeveloped as in advanced countries but within a different cultural and institutional framework—I would go further than he. There is a good deal of evidence that people in underdeveloped countries are more ardent income-maximizers than those of industrialized countries. The percentage increase in income required to move a man 1,000 miles to a new kind of job is less in Java or Johore than in Michigan or Mississippi. Since incomes are so much lower in underdeveloped countries, this higher degree of occupational and geographic mobility is just what we should expect. Indeed, in Indonesia, India, and the Philippines, labor may well be too mobile; too many people are on the move, especially between country and city.

Professor Rottenberg's major conclusion can be established, in fact, from the masses of sociological and anthropological material now available regarding economic behavior in underdeveloped countries. It need not be deduced from formal economic models designed to show what sorts of results should be expected from different sets of behavior patterns. Indeed, deduction from indirect evidence can be dangerous. For example, the frequent changes in government policy in underdeveloped countries need not mean, as Dr. Rottenberg thinks it does, that government and profit-maximizers are engaged in a continuous cat-and-mouse game. It could mean that a development-minded government is trying desperately to find some policy that will arouse the people from their lethargy and produce a "take-off" into growth. Only direct evidence can show which it is. The direct evidence is there, and we would do well to use it.

It is equally dangerous to deduce behavior patterns from occupational and wage structures, by applying a model that abstracts from population growth, technological change, and discontinuities in production functions. Underdeveloped countries are typically divided into two rather distinct sectors: one industrial (including plantation agriculture) and one rural. The industrial sector is capital intensive and has relatively fixed technical coefficients. It enjoys technological progress of a laborsaving nature. Given a high rate of population growth (which industrialization tends to produce), even quite substantial rates of investment in the industrial sector may not reduce the proportion of the labor force employed in agriculture. The bulk of the increase in population must find a livelihood in the rural sector; since coefficients in that sector are variable, agriculture becomes highly labor intensive, with low output per man-year. Thus individual eagerness to move into better-paid industrial jobs is perfectly consistent with stability of both the wage and occupational structures through time. (I am not even sure of Rottenberg's facts here. I do not believe that data for Asian countries would show instability of the employment structure during the last few decades.) Nothing whatsoever about incentives can be gleaned from looking at these structures alone. People have wanted to move, but have had no opportunity to do so. Fortunately, we

do not have to rely on such roundabout ways of studying economic behavior in underdeveloped countries.

If, then, our observations tell us that individual incentives are much the same in underdeveloped and in advanced countries but that varying cultural and institutional settings lead to different results from similar patterns of basic motivation, interest shifts from individual incentives to the social framework, from psychology to social psychology, sociology, and anthropology. Here, again, we are not bankrupt; there is a sizable and growing literature germane to the relationship between the kind of society and the rate of economic growth. Everett Hagen, for example, building on the psychological studies of McLelland and others, together with case studies of his own in Mexico, Colombia, and Japan, is working towards a neo-Weberian theory of entrepreneurship in terms of a subdominant or threatened elite. Our own studies in Indonesia—particularly those conducted by Dr. Clifford Geertz suggest that a take-off into sustained economic growth requires the simultaneous appearance of an indigenous entrepreneurial class, and a political power elite that is at least not hostile to it. Indonesia had vigorous entrepreneurs and traders when the Portuguese arrived; the country's economic history thereafter is one of repeated regeneration of an indigenous enterpreneurial group, each time frustrated by a political elite hostile to it and powerful enough to destroy it. It looks as though the same thing is happening again now; hypernationalist, anticapitalist government seems bent on destroying the new Indonesian capitalist group and may well succeed in doing so. Indonesian entrepreneurs fit well into Hagen's categories: a subdominant elite—the Santris or extreme Moslems—is the main source of entrepreneurship in Java; a menaced elite—the old aristocracy, good Hindu-Buddhists all—is providing entrepreneurship in Bali.

More recently I have been associated with a study of incentives and economic growth closer to home: the laggard region of French Canada. The statistics show a persistent gap between per capita incomes in Quebec and in Ontario, or in Canada as a whole, ever since 1870. Historical documents suggest that the gap was there a century earlier. To our surprise, we have found that this persistent gap cannot be explained in terms of a slower rate of industrialization or a slower rate of agricultural improvement. Nor has structural change been significantly slower or different in Quebec from what it was in Ontario or the rest of Canada. Why, then, the continuing difference in incomes? Preliminary results seem to show that the answer lies in the failure of the Province of Quebec to produce its own class of entrepreneurs and venture-capitalists. For example, a study of 1,600 firms operating in the Province showed that French Canadian entrepreneurs are contributing virtually nothing to industrialization; another study turned up only 26 French-Canadian firms listed on the Montreal stock exchanges, accounting for less than 1 per cent of the value of stocks traded. Current explanations of this lack of incentive for entrepreneurial and venture-capital activities among French Canadians run in terms of conquest, exploitation, population pressure, and "superior spiritual values." We hope to find out more precisely what the reasons are.

I introduce these examples as illustrations of the kind of research on in-

centives that will be fruitful, not for their own sakes; so brief a summary could not persuade anyone of their specific conclusions. But it is the interaction of individual economic behavior and the social, political, and technological factors informing them that is worthy of our time and attention rather than the shapes of individual static supply and demand curves implicit in the results of economic behavior.

As for the backward-sloping supply curve of effort (and perhaps of risk-taking as well) I have already expressed my own view that in a static society the backward slope is normal. People with no clear vision of different and better way of life attainable by their own efforts—a vision continuously renewed by the example of others' success—will think it foolish to do other than buy more leisure when rates of pay increase. Economic growth, and the accompanying change in patterns of everyday living, will shift static supply curves continuously to the right, in such a way as to create the illusion of an upward sloping curve. But let growth bog down—as it did between the wars in Australia—and the backward slope of the static supply curve will again become apparent.

Thus far I have been saying that I agree with Dr. Rottenberg, but feel that his conclusions are more solid when borne out by direct observation of economic behavior and the social structure within which it operates. With his one policy conclusion, however, I think I disagree completely. The "open door" to the profit-maximizers is what led many of the ex-colonial countries to their present predicament. The centuries-long policy of the Dutch of keeping the door open only to themselves for large-scale operations and open to the Chinese but not to the Indonesians themselves for small-scale operations has left the Indonesians with an inadequate supply of entrepreneurship—in or out of government—and a widespread antipathy to enterpreneurs of any kind. Can we be sure that growth will be more rapid over the next twenty years by having the Chinese, Indians, and Arabs replace the Dutch and Chinese, preserving the "dualistic" nature of the economy? My own hunch is that carrots and sticks to accelerate the growth of an indigenous Indonesian bourgeosie would enhance development more. Let me ask Professor Rottenberg: Would England have developed more rapidly during the industrial revolution if freedom and encouragement had always been given to Jews and Lombards and other "peripatetic marginal people" but never to Englishmen?

HERBERT STEIN: I shall comment on what seem to me the four main points in the Meckling and Alchian paper.

The first point is that incentives—the goals individuals seek—are constant and universal. All men (and presumably women) have always wanted the same things. They have always wanted exorbitant wealth, tyrannical power, idolatrous prestige, lavish consumption, and undisciplined leisure. The differences in behavior of different people at different times and in different societies do not result from differences in the goals but result from differences in the relations between costs and goals, which is to say, in the terms of trade among different goals. This proposition is asserted on the basis of an empirical judgment of the authors.

This appears to me a rather unsatisfactory explanation of human behavior. The authors do not present the empirical evidence on which their judgment rests. For all I know, there may be some ultimate goal which motivates all men equally at all times. But I doubt very much that wealth, power, prestige, consumption, and leisure are the ultimate, universal goals. (Incidentally, I don't understand why the authors apply such adjectives as "exorbitant," "tyrannical," and so on to their goals. Why don't they just say that people want "more" of these things?) The list is both too short and too long. There is no room in this view of human goals for truth, beauty, goodness, immortality, excitement, security, love, lust, jealousy, or hate, and I find it hard to regard these as merely means to the authors' five goals. In this sense the Meckling-Alchian list is too short. But if we want to explain rational, maximizing behavior it is not sufficient to be left with five goals to be maximized and no prescription for combining the five. Of course, there is the further question whether the maximizing model fits all or most of human behavior.

My comment is not mainly about the particular list of goals the authors have chosen; the irrelevance of this list is illustrated by the fact that after page 1 the authors never refer to the list in explanation of anything. I am expressing a doubt that any list of observable goals will be found to be invariant to family and social conditioning, whatever may be true in the darker recesses of the human psyche. More than this, I am expressing a doubt whether economists have any license, on the basis of the kinds of phenomena economists observe and the techniques they use, to go around saying what all men always want.

For our purposes it may be sufficient to assume a hierarchy of goals—the goals at each level being instrumental for achieving the goals at the level directly above. The higher level goals are probably more uniform and constant among individuals and societies than the lower level goals. Which goals are to be assumed as given would depend upon the question under investigation. The economist for most purposes can probably take rather low-level goals as given. The psychologist or anthropologist may have to accept as variable, and requiring explanation, all the goals up to a rather high level. I should not think we would have to resort to any fundamental changes in human nature to explain differences in economic behavior in the U.S. between 1900 and 1959. In this I agree with Meckling and Alchian.

The second main point in the paper is that the most important change affecting human behavior in the U.S. in the twentieth century is the growth of government activity. I assume we are dealing here with human behavior of the kinds that economists study.

The reason advanced for this concentration on the growth of government activity is that it affects the division of human effort between the market place and government as institutions in which individuals pursue their goals. This is only asserting the original proposition all over again. Why is the shift between the market place and government more significant than the shift between the sole proprietorship and the corporation, between the farm and the city, between the water wheel and uranium, between the seven-person family and the four-person family? I find no answer to this in the paper.

The third main point in the paper is the explanation of the growth of government activity. To explain this the authors invoke a change in attitudes. Nineteenth-century proscriptions against the use of the state as a means to individual ends have withered away. The range and scale of acceptable government activity have greatly increased. As one consequence, the effort devoted to influencing the government has increased.

I would accept this particular change of attitude as part of the explanation, even though it is not clear to me how these people with invariant goals generated the change of attitude. However, it seems to me that there must be more to the story than this.

Control of the government was highly prized long before the twentieth century, and people employed rather strong means to achieve it, including wars, assassination, royal marriages, and bribes. The proportion of the population that could participate in the process of influencing the government was small, for various reasons. Those who had influence presumably used it as a means to their individual ends. But since the possessors of influence were few, pursuit of their ends did not necessarily affect the mass of the population very much—except in such minor ways as conscription for military service, restrictions on geographic and occupational mobility, etc.

As time passed, the number of people who could participate in influencing government increased, because of changes in the political system, rise of average incomes, spread of literacy, and other developments. Government then became a means of serving the individual ends of more people, and as a result the scope of government activity expanded. Meckling-Alchian emphasize that more effort goes into influencing government because government does more. It is also true that government does more because more people participate in influencing it.

I would like to offer another hypothesis. Suppose the population divides its income between private product and public product turned out by government. Total resources are constant and the demand schedules for the two products are also constant. Productivity rises in the private sector and falls in government. For example, it takes more resources to get the same degree of national security as formerly. The rise of productivity in the private sector predominates and total national income rises. People will take more of both private and public product, but presumably the private product rises more. However, resource input may rise in the public sector and decline in the private sector. It is always the inputs we measure when we measure the relative sizes of the public and private sectors. Along this line we could explain what has happened without invoking the deus ex machina of a change in attitudes.

I do not want to try here to propose a theory of the growth of government in the U.S. But I am not satisfied to explain what has happened as a fall from grace, as if the American people collectively ate the apple on January 1, 1901, and have been sinning ever since. This seems to me rather unhistoric.

The fourth main point is the authors' evaluation of the growth in government activity. On this they are quite clear. They condemn it (strong words) on the basis of an ethical judgment.

If Meckling and Alchian want to condemn the growth of government on

ethical grounds, they are, of course, free to do so. I would offer two comments. First, if you want to communicate with other people, it is desirable not to jump too quickly and directly to the ethical judgment. It is desirable to try to relate the behavior under scrutiny to some moral values that the rest of the community may be assumed to share, or at least understand. If you tell me that growth of government limits individual freedom and that limitation of freedom is morally wrong, I can at least consider whether I think the two parts of this proposition are correct. But if you tell me that growth of government is morally wrong, I do not even know what I am supposed to think about. I learn something about Meckling and Alchian, but not about government.

Second, I am puzzled by the relation between this ethical judgment and the Meckling-Alchian view of human nature. If all men have the same goals—namely, exorbitant wealth, tyrannical power, idolatrous prestige, lavish consumption, and undisciplined leisure, and only those—on what basis or for what purpose do our authors pass these judgments? Shall we assume that Meckling and Alchian share these goals? If so, I do not think that they have any standards for an ethical condemnation of the behavior of others—although they may regard the behavior as inefficient, which is quite a different thing. In fact, we may be forced to conclude that the authors make their statement in pursuit of these same goals for themselves. Or shall we assume that the authors alone, by some means, have escaped from the human condition and have acquired some higher values that the rest of us do not have? In this case, I do not think they can expect the rest of us to be affected by their expression of an ethical judgment.

I find that these comments have some tenor of resistance to the Meckling-Alchian attack upon the growth of government. This is an unaccustomed role for me. I can only explain it by the belief that the free, private system needs to be saved from the fundamentalist enthusiasm of its supporters as well as from the sins and errors of its attackers.

PROBLEM OF ACHIEVING AND MAINTAINING A HIGH RATE OF ECONOMIC GROWTH

RAPID GROWTH AS AN OBJECTIVE OF ECONOMIC POLICY

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I. Capital Formation and Technological Progress

It is revealing, even if conventional, to attribute the long-run growth of output to population growth, to the growth of the capital stock, and to technological-organizational improvements ("innovations"). Within the same framework the growth of per capita output and the rise of living standards should be explained by the increase in the capital-labor ratio and by technological-organizational progress.

A few words of caution are required to bring out the fact that labor does not have an unqualified interest (an interest "without constraint") in an ever increasing capital-labor ratio or in technological-organizational progress, although labor does have this interest, provided that we can take innovating activity of the proper kind for granted. The reason why a constraint pointing to innovational requirements enters here is that the growth process itself will stop and unemployment is apt to develop if the rate of return on investment declines too far; that is, to a floor level set by risk premium requirements. If a low rate of return on investment merely stopped the growth process but did not also create unemployment, then labor would still have an unqualified or unconstrained interest in a rising capital-labor ratio. because the real wage rate rises monotonically with the ratio of capital to labor. But if the level of money wage rates and of prices does not possess unlimited downward flexibility, then it is not possible to count on the "real-balance effect" (Pigou-Patinkin effect) to assure full employment—in other words, Say's Law is put out of commission—and in this case sufficient lowering of the rate of return on investment may not merely put an end to the growth process but is apt also to create the "Keynesian" variety of unemployment. It is true that this type of unemployment can be eliminated—at least "in principle"—through government investment or through deficit-financed transfer payments to consumers, but it is questionable whether under large-scale programs of this sort the essentials of a decentralized market economy and of its political institutions could be preserved.

This means that rather general social interest attaches to the avoidance of "excessive" capital formation, such as lowers the rate of return on investment to a floor level. But if the innovations of a period satisfy certain requirements, then a significant increase in the capital-labor ratio may take place without resulting in any excessive capital formation in the foregoing sense. An appreciable lowering of the rate of return on investment will be avoided if the quantity of innovating activity (i.e., its over-all product-raising effect), and the distribution of its laborsaving, capital-saving, and land-saving effects develop in such a way that the marginal productivity of capital is reasonably well maintained. This implies that innovations must not become excessively capital-saving. The available evidence shows that in the Western economies innovating activity has satisfied these requirements in the long run and that at the same time innovations have not become so strongly laborsaving as to prevent a steep up-trend in real wage rates. As for cyclical disturbances and the consequences of temporary saturation, it should be possible to prevent these from becoming too severe by compensatory monetary and fiscal policies. It seems quite reasonable to assume that somewhat accelerated capital formation would accelerate growth without giving rise in the predictable future to long-run Keynesian difficulties (which would develop only if innovating activity were to become quantitatively insufficient or excessively capital-saving in character).

Furthermore, growth would of course be accelerated by increased technological-organizational progress. But the technological progress we have had, and shall continue to have, mostly requires the acquisition of new capital goods. Therefore, a policy aiming at high rates of technological progress must do its best to promote capital formation, along with research and education.

In summary, we may conclude that, given the population of a country and its rate of population increase, the growth rate of output depends both on the rate of capital formation and the rate of technological progress; and that an effort to raise the growth rate of output is likely to be successful if it concentrates on promoting that kind of capital formation which incorporates technological advance.

II. Inflationary Difficulties

The postwar experience of Western nations has convinced many economists of the significance of a further problem which previously it was not usual to stress in the context of growth theory. Sufficiently high degrees of resource utilization—at which there does not yet exist an aggregative excess demand—are apt to cause cost inflation, perhaps primarily cost inflation of the "wage-push" variety. The main charac-

teristic of inflation of this sort is that even in the long run a desirable degree of utilization cannot be maintained without letting unit costs rise. Or to put it somewhat differently, the main characteristic of cost-inflation is that restraining demand by monetary-fiscal measures does not merely flatten the price trend but that such a policy of demand restraints results in a reduced degree of utilization even in the long run; that is, even aside from a loss of output during a period of adjustment. This is because noncompetitive forces on the supply side of factor markets are powerful enough to raise unit costs for given outputs as soon as the factor markets become sufficiently tight. The post-Korean period in the United States illustrates these propositions, which should be supplemented by the statement that similar price increases may originate also in the monopoly power of producers.

Recently there has been quite a bit of controversy on the question of whether the inflation of the post-Korean years should not after all be interpreted (at least in part) as demand inflation, with a lag between the earlier excess demand and the subsequent inflationary effects. I do not deny that models of this sort have proved revealing, but I believe that such formulations or formulations based on the existence of sectoral excess demand bypass the issue with which I am concerned. The essential fact, it seems to me, is that in the post-Korean period a policy aiming at approximate general price stability has rarely been compatible with high employment and adequate growth. The effective demand required for high utilization at a stable price level was used up for underutilization at rising prices. I do not see how this fact could be interpreted without relying heavily in one's interpretation on noncompetitive forces on the supply side; that is, on forces of cost-push that produce general price increases even in periods with no aggregative excess demand (indeed in periods of excess supply). Thus even if we recognize the possible causal role of past excess demand or of simultaneous sectoral excess demand, the proper interpretation of generalized inflation must in such cases emphasize the "monopolistic" cost behavior through which the past excess demand, or the simultaneous sectoral excess demand, touches off price increases in periods or in sectors with no excess demand.

The fact that economic systems show considerable resistance to price-level stabilization at high degrees of utilization (but even in the absence of aggregative excess demand) suggests that specific power groups can get away with an inflationary type of redistribution in their own favor for long enough to make such action rewarding, while they presumably could not get away with an orderly redistribution which could be carried out at a constant price level. This in turn suggests that the essence of the matter is that claims to real income exceed the

available real income, and that in each stage of the process certain groups in the economy catch other groups by surprise. Subsequently, the other groups whose claims to real income have stayed unsatisfied engage in a move to catch up. This is the reason why an inflationary process of the cost-push variety carries a serious threat of acceleration. I do not believe that this reasoning is contradicted by the interesting studies which Charles Schultze, Otto Eckstein and Gary Fromm, and Thomas A. Wilson undertook for the Joint Economic Committee; or by the results of Ruth Mack's research which were published in the August, 1959, issue of the Review of Economics and Statistics. These studies throw a good deal of light on various important aspects of the recent inflation; they do not, however, contradict the proposition that the generalization and perpetuation of this type of inflation is a phenomenon rooted in the concentration of market power.

We cannot be sure just how sensitive these inflationary forces are to small changes in the employment or unemployment ratio. It is possible that most of the forces of cost-push inflation will become significantly weakened by monetary-fiscal restraints compatible with an average degree of employment which is still tolerably high. These inflationary forces may prove very sensitive to the job situation with which the individual worker is faced whenever he wants a new job. In this event it will not take too much statistically observable aggregate unemployment—and it might take very little unemployment of extended duration—to remove any serious threat of inflation. This is the objective of the experiment in which some Western nations—including the United States—are engaged at the present writing; an experiment to keep cost-inflation in bounds by monetary-fiscal means. The experiment will prove successful if the resulting unemployment rates will prove tolerable per se and if long-run growth rates will hold up reasonably well at the degrees of utilization which become established. I think it is conceivable that the experiment will be successful, but this can of course not be taken for granted.

If this type of experiment should prove unsuccessful and if, whenever our employment ratio and our growth rates are not seriously deficient, we should again become faced with a real threat of appreciable and accelerating inflation, then we would have to choose between two lines of policy.

One line of policy is that of direct wage and price controls. Political controls of this sort would render the price and wage structure, and thus the allocation of resources, thoroughly arbitrary. It would be unconvincing to defend comprehensive controls with the argument that noncompetitive forces have introduced a great deal of arbitrariness in the price and cost structure all along. Where the degree of deviation

from competitive norms has not shown a rising tendency, Western cost and price structures have at least responded properly to changes in technological conditions and in relative demands. Even this would, I think, cease to be the case in the event of comprehensive political wage and price setting. The farm-price policy and some other illustrations give us a taste of what might be in store in such circumstances. Furthermore, comprehensive direct controls would very greatly increase the power of the executive branch of the government. Accelerating cost-push inflation could of course not be left uncontrolled, but administrative wage and price controls are an unattractive remedy. Let me add that, in my opinion, those proposing reliance on friendly agreements between the governments, the representatives of labor, and the representatives of management are using a euphemism for direct controls.

The other possibility would be to weaken the market power of unions and of corporations by reducing their size sufficiently to make sure that in each major industry there should be a fair number of independent bargaining pairs. This of course would not imply "atomization" of our major industries but it would imply that in some of these industries it does not take the largest observable sizes to utilize practically all the real economies of scale. Each bargaining pair would then consist of a union and a firm, and each pair would be under appreciable competitive pressure from other pairs. Broadened antitrust acts would have to be enforced against collusive behavior. Under such conditions monetary-fiscal policy could approximate full employment closely without getting us into an inflationary situation. The bargaining pairs in the various industries would know that rapid loss of competitive position is the penalty which inflicts itself upon a union and a firm concluding a bargain with inflationary implications. A reasonable monetary-fiscal policy could then stabilize the price level without creating appreciable unemployment. As for the general trend in real wage rates, this could be trusted to take care of itself in accordance with productivity trends, as long as a high level of employment were maintained with the support of monetary-fiscal policy. Whether such a monetary-fiscal policy would have to run a deficit or would be accumulating a budgetary surplus is unpredictable a priori.

These solutions involving a reduction of market power are of course politically very difficult. It is conceivable that the growth of foreign economies and (let us hope) free trade will help to reduce the degree of market power in the United States. If, for this or any other reason, the effort of Western nations to get reasonable degrees of employment and satisfactory growth rates without appreciable inflation will prove successful, then it will not be necessary to face the great political dif-

ficulties of significantly extended and intensified antimonopoly action. But in the contrary case we will have to choose between broadening the scope of our antimonopoly policies on the one hand and resorting to comprehensive direct controls on the other. I would like to suggest that it would be a mistake to plunge into a policy of extensive direct market controls simply because at first this might appear to be the line of least political resistance. This, I think, would be a mistake, and a mistake we would be quite likely to make.

We now have arrived at the conclusion that strengthening our growth rates requires promoting capital formation of the kind which embodies technological advance; and that a policy aiming at this objective can prove successful only if it is able to remove the threat of accelerating cost-push inflation along the path of economic growth.

What is involved in a policy aiming at increased capital formation?

III. Aiming for Higher Sustainable Rates of Growth

Programs for accelerating the rate of capital formation imply the value judgment that a higher rate of saving would be desirable. This is not quite the same thing as to say that a policy aiming for more rapid growth must violate the time-preference scales of the public. A substantial (more than "marginal") increase of the rate of saving has some effects which are in the nature of "external economies." Hence bringing about a bulky increase in capital formation may prove justified in terms of individual preference scales, even if political measures are needed to raise the rate of saving. This is because in his saving decisions the individual saver leaves out of account the benefits which develop as external economies of bulky incremental saving—benefits which accrue partly to the savers themselves qua wage earners and citizens. Such external economies would develop even in an eternally peaceful world, largely because of the connection between capital formation and technological progress.

Still, in a genuinely peaceful or unified world many of us might refuse to make the judgment that the general social interest is served by raising the rate of private saving beyond the rates establishing themselves through atomistic individual decisions. On the other hand, it should be remembered that in a genuinely peaceful or unified world the ratio of saving to consumption would in all probability be higher than it is now, because it is reasonable to assume that high government expenditures—mainly high defense expenditures—have on balance increased the tax burden of corporations and of high-income recipients in a greater proportion than that of the relatively low-income groups. Therefore, by providing inducements to save and by raising the present rate of capital formation we would merely undo (or partly undo) an

"artificial" lowering of capital formation. Quite aside from this, the fact that we do not live in a genuinely peaceful or unified world implies also that a vital Western interest attaches to growth rates such as will prevent a gradual rise to economic supremacy of the Communist block. These are rather general value judgments underlying the public concern with the problem of stepping up our rate of growth—a growth rate which has recently been weak. I happen to share this concern. The logical purist may object that the growth rate of the GNP is a statistical concept to which not much "ultimate meaning" can be attached. My answer would be that so far this type of growth rate has proved a pretty good "proxy" for changes that were indeed of very great historical significance.

The rate of saving and of capital formation could doubtless be increased by means of tax policy. Here again political difficulties would be encountered, but it is very likely that a good many difficulties could be overcome by determined effort. What could be accomplished by reducing taxes that have an adverse effect on savings and investment?

It is obviously impossible to try to answer this question without making subjective judgments. These I shall have to make, but I will comment on alternatives subsequently. I will begin my discussion on the postulate that we find it desirable to provide additional incentives for private saving and capital formation, and that we wish to engage in adequate government expenditures of the kind which support growth tendencies.

There is a possibility that gradually we will be able to reduce tax rates as the economy grows. This is because tax revenue at given tax rates tends to grow—indeed tends to grow at a somewhat higher rate than the GNP—creating a leeway for gradual tax reductions whenever there is no urgent need for increasing the sum total of fiscal expenditures in the same proportion as that in which the tax revenue rises. It may not be too optimistic to assume a lesser rate of increase in aggregate fiscal expenditures, considering that this aggregate includes such items as farm subsidies, veterans benefits, and interest on the debt. These at present make up almost one-fourth of the federal budgetary expenditures. If along the growth path of the economy aggregate government expenditures will rise in a lesser proportion than does the revenue at given tax rates, there will be room for a reduction of tax rates. But these possibilities depend on future defense needs about which nothing is known.

So far as possible, I would like to avoid speculations about future defense needs. It is a fact that over the past few years our defense expenditures have risen in a smaller proportion than the GNP and in a much smaller proportion than that in which the GNP would have

risen if its rate of growth had been adequate. This has left many of us with an uncomfortable feeling. At present there is much talk about stabilizing or even reducing armament expenditures. Let us assume, however, for a moment that we shall in the long run raise defense expenditures at a rate corresponding to reasonably adequate growth rate of the GNP, say, at about 4 per cent per annum. In this case the potential budgetary surplus should be rising more or less continuously at an annual rate of, say, 4 billion dollars (as expressed in terms of present numerical proportions). Of these 4 billions, say, 2 billions would be absorbed by a continuous rise in defense needs (at constant prices and on very speculative assumptions). If now government expenditures other than those for defense, farmers, veterans, and interest were to be raised on the average by about 10 per cent per annum, this would absorb perhaps one to one and one half of the remaining 2 billions. Annually there would remain perhaps 500 million dollars or a little more, which could accumulate for a gradual, slow reduction of those taxes which bear on investment. This assumes a balanced budget, which will not necessarily prove the target most consistent with growth objectives. It also disregards the possibility of having to raise defense expenditures suddenly at a significant rate, since this would call for a reorientation of tax policy, involving conceivably an increase rather than a reduction in some tax rates. (I will add here that if from 1955 to 1959 we had had an average GNP growth rate of 4-4.5 per cent per annum and had been raising defense spending in proportion to the GNP, we would now be spending almost 10 billions more for defense than the amount we are actually spending. Consequently, here too the long-run problem is very largely that of the GNP growth rate, even if relative allocations are not changed much.)

Whenever we get around to tax reductions, I would suggest giving the reduction of the 52 per cent corporate rate high priority rating. This would strengthen incentives, and much of the tax saving would go into capital formation (largely through reinvestment). I believe that attention should be given also to the possibility of setting a lower tax rate on the undistributed proportion of corporate profits than on the part which serves for dividend payments, even though a change of this sort would presumably require qualifying provisions so as not to stimulate an actual reduction of dividend payments below previously attained levels, and so as not even to stimulate the reinvestment of all profit increments. After all, ploughed-back profits are already receiving preferential treatment, even though not on the level of corporate taxation but by not becoming subjected to the individual income tax. Maintenance of dividend payments in recessions is a stabilizing factor; and

an unduly high marginal corporate reinvestment ratio could bring irrational investment decisions and a further concentration of economic power. Therefore, while preferential corporate rates on ploughed-back profits would provide a welcome stimulus to investment and growth, it would I think be a mistake to go all out for this type of reform without using safeguards.

However, growth oriented tax reform could be put into effect, not merely along a gradual growth path, but promptly, without a loss of revenue. Recognizing that we are now moving into increasingly controversial territory, I will nevertheless point out the following facts. Reducing all successive bracket rates in the individual income tax by 15 per cent of the rates themselves and increasing exemptions by \$100 (i.e., each exemption from \$600 to \$700) would cost about 9 billion dollars a year, which is no more than the yield of a very limited sales tax. Without going into details I will merely say that a sales tax of such yield might, for example, be levied on a volume corresponding to merely 40 per cent of the aggregate national "consumption expenditure," in which case the rate of the tax would have to be about 7 per cent on the retail level. It is my guess that most of us would not consider this an antisocial reform, since foods and drugs, housing, and practically all other items, which even the poorest must continuously acquire, could be wholly exempted. In essence, I am suggesting here giving consideration to a package which would substitute a moderate and selective sales tax—or luxury tax—for part of the present income tax burden of all income classes. The objective would be not to harm the taxpayers of any income class if they persist in their present spending habits, and to give them an advantage if they decide to save more. It seems to me that a growth oriented tax policy should move at least to some extent toward taxing luxury goods rather than income in general.

Alternatively, one could of course move from the taxation of income toward the taxation of consumption in general, for example by using the device of the expenditure tax. The disadvantage of this device would I think be that all families that are atypical in the sense of having to spend more than is implied (as a norm) in the rate schedule of the expenditure tax would be hard hit. The sales taxation of

^{&#}x27;For illustration, consider the following. Say for example that a household with an income of x dollars "typically" spends precisely its income on consumption. Then x dollars would presumably be the consumption level on which the expenditure tax would levy the same rate as does at present the income tax on x dollars of income. But a family which is atypical in having good reasons to dissave for a good many years, in addition to spending x dollars, would be hard hit by such a rate schedule of an expenditure tax. Leaving an outlet for the untaxed consumption of necessities would I think make a big difference in a great many cases.

nonnecessities would I think have the advantage of leaving an outlet for the consumption of untaxed necessities. But I am sure that this, too, belongs among the controversial points.

A further alternative measure for raising the amount of savings and of capital formation would be to run all the time a surplus in the social security account. This, however, would amount to financing government expenditures or private investment by means of compulsory deductions from wages and by means of the employment tax. I do not consider this method particularly desirable and, therefore, I am inclined to the view that the package which I have been describing is on the whole more advantageous.

It is of course possible to object that the sales tax with exemptions which is contained in this package would bring undesirable selectivity in the sense of penalizing and subsidizing different types of market behavior. This objection I would not regard as decisive because the income tax burden, for part of which this package would substitute a sales tax, also has undesirable selectivity effects as between different types of market behavior. Indeed, while high marginal income tax rates impose a penalty on attitudes conducive to growth, the selectivity of a limited sales tax would have the contrary characteristics. The sales tax burden which we are considering would be conditional—i.e., every household could at any time avoid most of it by not spending on taxed items—and hence it would probably have a smaller disincentive effect than the unconditional income tax. Furthermore, savings would be stimulated.

In the language of welfare economics, both an income tax and a sales tax of the luxury tax variety carry an excess burden. They possess undesirable selectivity (expressing itself in substitution effects) and this is accepted because it inevitably comes in a package with the desired selectivity by which we wish to protect the low-income groups. The undesirable selectivity of all practically feasible taxes pushes the taxpayer around, so to speak. But various taxes push the taxpayer in different directions. A growth oriented tax policy should, I think, push the taxpayer more in the directions in which a luxury tax pushes him and less in the direction in which an income tax pushes him than does our present tax structure. I am arguing that this could be done without appreciably changing the desired selectivity of the tax structure; that is, without placing additional burdens on the low-income groups.

I will mention the question of so-called "punitive" rates here only tangentially. Whether bracket rates in excess of 50 per cent are justified or not depends exclusively on whether they serve the purpose of a reasonable "political equilibrium." This is a hazy question about which

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the economist cannot have a professional opinion one way or the other. But we know that the yield of these rates is negligible (less than 1 per cent of the total federal tax revenue), and that the existence of these rates leads to irrational decisions of various sorts, prominently including decisions to find means of tax avoidance. The number of taxpayers in those brackets is very small, but most of the strategically located persons in the business life of the country fall in these brackets with part of their incomes. On the other hand, very large incomes from wealth can easily be given the form of capital gains, and for various reasons (some of which are good reasons) the preferential treatment of capital gains will hardly be abolished. Economically the top rates in the income tax structure are "irrational." By closing some "loopholes"—business expenditures for entertainment, overgenerous depletion allowances, etc.—it might be possible to raise more revenue than by leaving the largely nominal top rates on the statute books.

My preceding observations relate mainly to the revenue side of the budget, although they include critical comments on expenditures for agricultural subsidies. It is necessary to add, however, that growth oriented fiscal policy would have to pay a great deal of attention to the expenditure side too. Very much will depend on whether we shall select the areas of thrift and the areas of adequately rising budgetary expenditure in a way consistent with our growth objectives. Research, education, public health, and specific types of public construction should be regarded as belonging among the high-priority areas. It would be difficult to say what can contribute more to healthy growth: research and education or capital formation. All three are vitally important. On the other hand, we should at least be able to prevent the sum total of interest-on-the-debt, farm subsidies, and veteran's payments from rising along with the GNP.

A last word on credit policy. I believe that in recent years the case against selective credit controls has been overstated. Our tax policies and our general credit policies are so strongly selective against capital formation and growth that it would be desirable to take part of the burden off investment and shift it to consumption. I believe that in periods of tight credit we should rely in part on consumer credit control and thus to a correspondingly smaller extent on general credit control.

In summary, it seems to me that growth could be speeded up by gradually reducing, along the growth path of the economy, the tax burden on corporations and particularly the tax on ploughed-back profits; by substituting a moderate sales tax with exemptions for part of the income tax burden, where the exemptions could make a sufficiently simple household budget almost completely tax free; by relying in part on selective credit controls when confronted with an

inflationary situation; and last but not least by orienting fiscal expenditures more toward the objective of growth rather than that of pleasing pressure groups. It is obvious that this sort of reform would rest on specific value judgments which others may take or leave. But I think it is possible to claim for such a package that it would promote growth without placing additional burdens on the low-income groups.

I have come to the end of my illustrations. It would be too hazardous to make a guess about the proportion in which per capita growth could be speeded up by measures of this general character. But there is evidence to suggest that recently the leading continental Western European countries have allocated a higher proportion of their output to capital formation than has the United States. There is evidence to suggest also that recently some of the Western European per capita growth rates have been appreciably higher than ours. The investment-to-output ratio is obviously not the only factor on which growth rates depend. But there exists a strong presumption that by stimulating research as well as capital formation and by increasing economic incentives, one can work toward accelerated growth. It seems to me that a comparison of our own recent growth rates with those of various overseas areas suggests that it would be wise to remove some of the growth reducing bias from our public policies.

IV. The Alternatives

I will finish by adding a word about my guess concerning the future course of events. As for the near future, I do not believe that the cost-push problem will actually be met by policies of deconcentration, or even that tax reform of the sort here suggested will soon be enacted. My reluctant guess is that whenever we wake up fully to the fact of having deficient growth rates, we might have to go through a phase of administrative controls instead of turning directly to measures which would strengthen a freer market economy. But sooner or later these trends towards centralization will be reversed. I believe that in retrospect the present period will rather generally be interpreted as one in which we have failed to fight a harmful concentration of market power and have failed to provide sufficient incentives for capital formation. At present we are not giving the "principles of a free market economy" a fair enough chance and we might be pushed toward more centralization, involving more direction of the wage and price mechanism, and more central regulation of the allocational system. If this is what should happen, the question of incentives for private saving and investment will of course be of considerably smaller significance.

But Western nations have had a very good record of keeping ideas alive—even ideas which temporarily seemed outmoded. My paper was

not written with the intention to argue that if during one or the other phase of our development we should attempt to solve our problems along different lines than those here considered, then our civilization will have received an irreparable blow. As the European experience shows, one can have a much more socialistic growth policy than that which I have discussed here and subsequently one may witness a renaissance of more individualistic values. Worse things than that have happened in history. But I do believe that, in principle at least, the detour over greater centralization could be avoided without giving up on growth and thus without abandoning the Western position in the world. This is what I have tried to express in this paper.

THE PROBLEM OF ACHIEVING AND MAINTAINING A HIGH RATE OF ECONOMIC GROWTH: A HISTORIAN'S VIEW

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The title of this session, as it was first transmitted to me, was the lofty scientific phrase: "The Conditions of Economic Progress." But a few months later it was transmuted to a more pragmatic, more typically American, theme: "The Problem of Achieving and Maintaining a High Rate of Economic Growth." This change is, I believe, significant of more than the national style; for what brings us here is not merely scientific interest in the wealth of nations but also a concern with quite specific and urgent issues of public policy.

Nevertheless, I shall begin by considering the question of growth—and American growth in particular—in its formal, academic setting; and I shall consider only in the latter part of my paper the sense in which American growth and its future is a problem.

In dealing with the prospects and problems of American growth, I shall apply a method of analysis which seeks to relate the history of sectors to the aggregate performance of economies.

Homerically simplified, my proposition comes to this: Within the framework set by the consumption function and the rate of increase in the working force, the rate of growth of an economy at any period is decisively affected by the momentum (or lack of momentum) in certain leading sectors. These leading sectors derive their high momentum from the entrance into the economy and the subsequent diffusion of new cost reducing production functions and/or from the rapid increase in output of products which enjoy high income elasticity of demand.¹ The leading sectors have certain direct effects on other sectors by setting up a powerful effective demand for new inputs; and they provide to the economy a wide range of external economic effects which, as it were, spill over outside the directly affected sectors.

These leading growth sectors sometimes also serve as leading sectors in business cycle expansions; that is, effective demand is sharply increased by the direct and multiplier effects of bringing new production functions into the capital stock. But in some booms the leading sectors are predominantly associated with lateral expansion in the economy,

¹ See the author's *Process of Economic Growth* (New York, 1952), especially Chap. iv, v, and "Trends in the Allocation of Resources in Secular Growth," *Economic Progress*, ed. Leon H. Dupriez with the assistance of Douglas C. Hague (Louvain, 1955).

with no marked long-run effects on productivity; e.g., housing. The implication of this distinction between the effects of a sector's expansion on effective demand as against productivity is examined below; and it is fundamental to this paper.

But so far as growth is concerned, retardation,² and the complex set of forces which impose it, lies at the basis of this view—a view which makes economic history, at its hard core, the story of a succession of leading sectors, at an early high-momentum stage of their evolution, carrying growth forward as the old leaders flag, by imparting to the economy as a whole a wide ranging set of direct and indirect impulses to expansion.

From this perspective, I have analyzed over the years a good many of the world's economies, emerging with the notion that the path from traditional societies to the era of high mass consumption can be broken up usefully into stages, each of which is dominated by a phase of high momentum in a definable group of leading sectors.³

On this view, the economic history of the United States since about 1910 assumes a quite particular shape. At about 1910 there was a waning of the impulses stemming from what we might broadly call the steel revolution, which had carried growth forward after the railways ceased to dominate growth in the 1880's.

The phase of growth which then emerged has been dominated down to very recent years by the diffusion to the American population of new patterns of consumption, a new way of life built on the mass automobile and the single family house in the suburbs. It has embraced a succession of electric- and gas-powered household gadgets; new types and qualities of food; new types and qualities of clothing; new habits in the consumption of tobacco and drink; new patterns of expenditure on leisure activities, including various new forms of mass communication; and the vast outlays on construction required to mount and to tidy up this persistent inner migration.

Technically, this revolution was made possible not merely by the level which American income had attained at the period when the new pattern took hold (in, say, the twenties); but it has depended for its continued momentum (as has the continued rise in real income) on a group of technological revolutions in electricity, light engineering, petroleum, rubber, and chemicals. In terms of timing, the process of diffusion occurred in two great surges: the boom of the twenties, and

² See the author's summary of the factors determining retardation in the book, *The Process of Economic Growth* (*ibid.*), pp. 99-102, and the source citations in footnotes 25, p. 97, and 35, p. 101.

p. 97, and 35, p. 101.

*For a summary of this argument see the author's article, "The Stages of Growth," Econ. Hist. Rev., Aug., 1959, Vol. 12, No. 1. The theme will be fully developed in the forthcoming Stages of Economic Growth (Cambridge Univ. Press, 1960).

the sustained decade of expansion after the second World War.4

The question arises as to whether the statistical evidence now available supports this view of the sectoral foundations for recent American growth. It is not easy to array data in their existing form so as to test this hypothesis rigorously. There are two basic reasons for this difficulty. As I emphasized in introducing the concept of leading, secondary, and derived sectors, the conventional grouping of production and productivity statistics cut across these analytic categories and make their exact statistical identification difficult.⁵ Second, certain of the impulses which derive from a leading sector are difficult to trace, taking us as they do into increasing returns and external economies.

Nevertheless, the data available tend to suggest, at least, that the hypothesis is not inconsistent with the facts already established. For example, Kendrick's rank order array of thirty-three American industries with respect to productivity increase is led by those most intimately connected with these new dimensions in consumption: electric and gas utilities, rubber production, tobacco manufactures, transport equipment, crude petroleum, chemicals, printing. And his array of industries ranked in order of percentage increase in output is similar in its implication.6

My confidence in this hypothesis has been strengthened by the pattern of development in Western Europe in the past decade where a similar revolution in consumption patterns has palpably been under way, associated with high momentum in a similar group of leading sectors within the Western European economies.7

In terms of the view that phases of growth can be usefully related to leading sectors, what can we say about the present position and prospects of the American economy?

Essentially these large features of the situation stand out:

1. The diffusion to so high a proportion of the total population of the single-family house, the automobile, and the standard mix of household gadgets makes it unlikely that growth can depend as much as it

The Stages of Economic Growth.

The Stages of Economic Growth.

Trends in the Allocation of Resources in Secular Growth," op. cit., pp. 374-76.

J. W. Kendrick, "Productivity Trends in the United States" (1959, mimeographed), Chap. VII; and S. Fabricant, op. cit., pp. 340-41. Also S. Fabricant, The Output of Manufacturing Industries 1899-1937 (New York, 1940), especially Chap. IV.

United Nations, "Consumption Trends in Western Europe," Economic Survey of Europe in 1958, Chap. V (Geneva, 1959); and Milton Gilbert and Associates, Comparative National Production and Price Levels (OEEC, Paris, 1958). Discussions in the spring of 1959 with those concerned with fifteen-year plans in Eastern Europe also suggested the connection between relatively high levels of mass consumption and dispropartionately rapid tion between relatively high levels of mass consumption and disproportionately rapid growth in the sectors of high momentum in the United States between 1919 and 1956 and in Western Europe of the fifties.

⁴ This view of American growth suggests a particular explanation for the length of the depression of the thirties, stemming from the character of the new leading sectors. See "Rostow on Growth," *The Economist*, Aug. 15, 1959, p. 415, and the fuller discussion in *The Stages of Economic Growth*.

did in either the twenties or the first postwar decade on the further diffusion of this pattern of life and of consumption to increasing proportions of the American population.

- 2. Without pretending to explain the phenomenon, it can nevertheless be said that in postwar years Americans behaved as if they preferred, at the margin, an enlargement of families to additional increments of income taken in the forms which have become conventional since the twenties. In a sense, diminishing relative marginal utility appears to have set in for real income itself, when conventionally defined. One consequence is that the United States faces the requirement of a massive lateral enlargement of the nation's economic base: social overhead capital; capacity to produce and to provide private services; and in the total level of consumption itself.
- 3. The backlogs in social overhead capital built up in the postwar decade, combined with increased social overhead requirements to serve the enlarging population, make it likely that such outlays may play a relatively larger role in the coming decade than they have in the first postwar decade. The continued rise in public construction during the recent recession suggests that such a shift in the balance of outlays is already under way.⁸
- 4. Thus, the income elasticity of demand revealed by Americans at present high-income ranges—with its heavy emphasis on babies and services—has weakened, in a sense, the historic link between the expansion in consumption and the key developments of industrial technology which has existed for about two generations. Put another way, we do not lack leading sectors capable of creating an expansion in effective demand; but, to a degree, we must look elsewhere for the maintenance of the rate of increase of productivity.
- 5. But a potential Jack Dalton exists. American society is in the midst of a quite remarkable process of scientific and technological development, reflected in radical increases in research and development outlays, which for some time appear to have been expanding at a rate of something like 10 per cent per annum in real terms. On the other hand, the continued shift of activity away from manufactures to trade, services, and construction (as well as the shift to "nonproductive workers," other than those in research and development, within manufactures) might be expected to damp the rate of productivity increase, despite some increase of productivity in services and certain branches of construction. Nevertheless, a society endowed and motivated as we

⁹ R. H. Ewell, "The Role of Research in Economic Growth," Chem. Eng. News, July 18, 1955, p. 2981.

⁸ Economic Report of the President, transmitted to Congress, Jan., 1959 (G. P. O., 1959), p. 176.

are, with scientists, engineers, and industrial research and development departments, need have no prima facie cause for despair, even though it no longer appears to have leading growth sectors tied intimately to the areas of high income elasticity of demand.

Thus, if our only concern was with the "conditions of economic progress" as applied to, say, the next decade of the American economy, we might conclude that our society had found, out of its own dynamics—notably in the rise of the birth rate and in the acceleration of applied science and technology—a basis for leading sectors in both effective demand and productivity; that the precise outcome for consumption per head was likely to vary marginally depending on a number of factors unpredictable at the present time; but that Americans would continue to face the relatively happy choice of distributing as among leisure, private goods and services, and public services a fairly regular increment in consumption, concerning themselves increasingly with the quality of American life rather than with conventional aggregate measures of production of goods and services.

But whenever this picture is drawn of the cheerful implications for American society of the onward march of compound interest, ghosts rise up to haunt the enterprise. Historians will find, for example, much significant in the counterpoint between the triumphant text and troubled footnotes of the CED's February, 1958, statement on *Economic Growth in the United States*; and in the contrast between the majestic patterns of growth and productivity presented to the Joint Economic Committee last April and the worried questions of the Committee's members.

It is clear, in short, that the future of American growth is now regarded by many Americans as a serious problem.

There are, in fact, six separable problems which evidently concern large numbers of Americans and which relate (or are believed to relate) in one way or another to the prospects for American growth. These may be stated as follows:

First, is the long-run rate of Russian growth, relative to that of the United States, a menace to American interests? Second, is the United States allocating sufficient resources to deter Communist aggression in the form of major or minor military excursions? Third, is the United States supplying sufficient capital to the underdeveloped areas to maximize the chance that they will be able to maintain their independence and to hold open the possibility of a democratic evolution of their societies? Fourth, is the United States allocating sufficient resources to social overhead capital? Fifth, is the United States in its international economic position moving towards a situation of protracted dollar weakness which would require a contraction of outlays abroad

and/or increased protectionist policies? Sixth, does control of inflation require in our democratic society a damping of the rate of growth?

In one way or another, these six issues are the underlying substance of the dialogue between those economists concerned with the growth of the American economy and those concerned with public policy.

With respect to the first, I shall not enter here into the increasingly widespread international sport of comparing the rates and patterns of Russian and American growth.¹⁰ I would merely state flatly this much: For the next decade at least there is nothing in the relative prospects for growth as between Russia and the United States that justifies making this matter, in itself, an issue of public policy.

The second, third, and fourth problems cited—those pertaining to the scale of allocations for military, foreign aid, and social overhead purposes—are, however, real enough. But to what extent do these problems of allocation relate to the rate of growth?

Their root cause does not, in my view, lie in the rate of growth but in certain American habits of mind, carried over from earlier phases of our history, and in the workings of the political process, as they affect the allocation of resources. This interplay of intellectual conception and conventional politics conspires to make it difficult for Americans to increase the scale of public outlays except at moments of acute crisis. Here lies an authentic danger to the national interest and a threat to the quality of American society.

Specifically, the working concepts of modern economics encourage the view that public outlays should be accommodated to the natural ebb and flow of the private sector, perhaps to be expanded at times of recession but certainly to be restrained when the private sectors exhibit high momentum.11 This perspective, carried over inappropriately from an era of depression and peace to a time of chronic cold war and secular expansion, constitutes a powerful deterrent to outlays in the public sector, especially at a time of chronic prosperity; for it renders difficult a rational choice between marginal outlays in the public and private sectors, without extraordinary exertions of political leadership which have not been forthcoming. Without such efforts, the calculation takes the form of a crude clash between the total claims of the state as against the individual family budget, in which the latter enjoys an evident prima facie advantage. The existing level of taxation acquires a degree of acceptability as citizens accommodate themselves to its burdens.

¹⁰ The author's views on this subject are contained in a statement released by the Joint Economic Committee, Nov. 16, 1959, and in testimony of Nov. 20, 1959.

¹¹ For example: "It is true that federal spending increased much less rapidly than did the nation's total expenditure after 1954. It may justly be held, however, that there was a need for special restraint on the government's part at a time when the rest of the economy was displaying extreme exuberance." See A. F. Burns, Prosperity Without Inflation (New York, 1957), p. 40.

Familiarity breeds not contempt but stoicism. Lacking a concerted effort of political leadership to dramatize the meaning of marginal shifts from the private to the public sector, it is difficult to generate the political base for tax increases or other forms of restraint on private outlays; e.g., checks on installment spending. This leads politicians, except under acute crisis circumstances, to work out the pattern of public outlays within ceilings determined by what the existing tax schedules—the arbitrary product of the last acute crisis—will yield at existing levels of income, if indeed it does not lead to inappropriate tax reductions.

It is essentially these two features of the American scene—one intellectual, the other political—which have made our response to the changing directions of challenge in the cold war so sluggish on the one hand and convulsive on the other. Neither our concepts of political economy nor our notions of politics have made it possible to deal with threats to the national interest in a forehanded flexible way. We have shifted erratically from the moods and political economy of peace to those of war. In the interval between, say, mid-1948 and the attack in Korea, for example, men in responsibility came to believe that a military budget beyond 15 billion dollars was a threat to the American way of life. After the convulsive reaction to the Korean war had lifted military outlays more than threefold, this new range became again accepted as a line to be defended with a quite irrational ideological fervor. And this new upper limit exerted a restraint on social overhead outlays by the federal government which, if the marginal public-private calculus were differently presented, a majority of Americans might well have rejected.

The heart of the Soviet challenge lies, then, in presenting us with a situation where our interests may be eroded away, without palpable crisis, to a point where a traditional convulsive American response will no longer suffice. Our conceptions and methods of allocation to the public sector are inappropriate to a world caught up in a technological arms race and a slow grinding struggle for power and ideological conception in the underdeveloped areas. It is not the Soviet growth rate we need fear but a mode of American allocation which tends to imprison us at a level of public outlays determined by our arbitrary response to the last major crisis.

Nevertheless, the rate of growth—and especially the rate of growth in productivity—does bear on the problem of allocation, as Report IV of the Rockfeller's Fund Special Studies Project dramatized; ¹² for a

¹² Rockefeller Brothers Fund, *The Challenge to America: Its Economic and Social Aspects*, Report of Panel IV of the Special Studies Project, "American at Mid-Century Series" (New York, 1958).

high rate of growth in gross national product makes it possible to enlarge both private income per head and public outlays, at existing tax rates. Put another way, the higher the growth rate, the less the potential clash between the claims of the two sectors. But a high rate of growth, in itself, does not guarantee that the public sector will be adequately supplied with resources; for the American allocation system does not automatically maintain constant fixed percentage allocations to various purposes (assuming for a moment that such a system would yield increases adequate to the national interest at high rates of growth in GNP). Without purposeful efforts the natural tendency of the American system is for public outlays to decline as a percentage of total resources, except at intervals of acknowledged crisis. In fact, as a rough approximation, it is not wholly unfair to define the Soviet advantage over the United States as consisting in a more stable percentage allocation to military and foreign policy sectors, starting from a high initial base, at a time of rapid increase in Soviet GNP.

I conclude, therefore, that at least three of the major worries that have generated recent discussions of the American growth rate are rooted in our concepts and method for allocating resources; and that these problems might be eased but they would not be solved by achieving a higher rate of growth.

Something of the same may be said about the problem presented by recent pressures on the American foreign balance. The existing level of American military and foreign aid expenditures has come under pressure because of two striking developments of the fifties. First, in general, the rate of expansion of world trade, under circumstances where gold production in the free world is expanding at a lesser rate, has forced the dollar to bear an increasing burden as a reserve currency.13 Second, the emergence of Western Europe and Japan into the age of high mass consumption has induced a scale and technological virtuosity in those industries in which the United States has hitherto enjoyed a relative advantage such that the European share of certain exports has increased and, moreover, these new dynamic leading sectors in Europe have attracted substantial flows of American capital. The reserve problem now confronted by the United States and the free world will, thus, not be automatically solved by a higher rate of increase in GNP. It requires a sober reappraisal of the international reserve problem as a whole, a lowering of barriers to dollar imports, and a more equitable sharing of the free world's military and aid responsi-

¹³ See notably, R. Triffen, The Return to Convertibility: 1926-1931 and 1958-?, No. 48, Mar., 1959, and Tomorrow's Convertibility: Aims and Means of the International Monetary Policy, No. 49, June, 1959 (both reprinted from Banca Nazionale del Lavoro Quarterly Review, Rome).

bilities. In the light of such a reappraisal and the international actions that might then be taken, some revisions in American payments and trade policy may or may not prove justified. If they are justified, they should be made in ways which minimize damage to our military security, our alliances, and the prospects for independence and democracy in the underdeveloped areas. Without such a direct and fore-handed approach there is an active danger that we shall chip away at the reserve problem piecemeal, cutting outlays and altering policies in terms of domestic political opportunism and damaging American interests in ways that are quite unecessary.

Nevertheless, one of the components of an American policy designed to deal with the reserve problem might well be a concerted public and private effort to accelerate the rise in American productivity, which, if directed to the appropriate sectors, might sustain the American export position at a time when the march of the stages of growth has tended to narrow certain earlier American advantages. Like other more advanced nations (and more advanced regions, like New England) the American balance-of-payments position requires that new sectors of comparative advantage be developed and sustained, as the diffusion of technology proceeds, and that productivity be increased in the older, sluggish sectors of the economy.

Now briefly the inflation problem and the rate of growth. In my view the inflation problem of the fifties is only superficially to be analyzed as the product of a peculiar wage-push or effective demand-pull. More fundamentally it arises from a historical change in the institutional methods and attitudes brought to bear in setting industrial and farm prices on the one hand and wages on the other.14 These changes have two distinct effects. First, they render it difficult to pass along productivity increases in lower prices. The common expectation is, therefore, that prices will rise; and money wage negotiations must bear the full brunt of achieving a rise in real wages. Wage negotiations are thus complicated because business negotiators must try to discount the effect of probable wage increases; and labor negotiators must try to discount the effect on real wages of probable price increases. In trying to hedge against the inflation they assume, they perpetuate inflation at the expense of the public interest. The existence of a strong price floor is compounded by a second and even more fundamental institutional fact: Money wage bargains are struck in a setting largely divorced from price policy—and from the course of average productivity—where

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¹⁴ Some of the complexities inherent in this problem, which cannot be explored here, are exposed with clarity in *Wages, Prices, Profits, and Productivity*, ed., Charles A. Myers (The American Assembly, Columbia Univ., June, 1959), esp. Chap. 3-6, by James S. Duesenberry, Clark Kerr, Lloyd G. Reynolds, and John T. Dunlop, respectively.

the negotiators feel little responsibility except a short-run responsibility to their immediate constituents.

The challenge confronting our democratic system is not to achieve sufficient restraint in total effective demand to prevent a chronic increase in wages and prices; for even if that were to prove politically and socially acceptable, on the scale of restraint required, it would yield a growth environment likely to make difficult the pattern of allocations most likely to protect the nation's interest and the quality of the society. Again, it is not the lower rate of growth that, in itself, would cause the difficulty, but the problem of making adequate allocations to the public sectors, at a time of stagnation or slow rise in GNP.

The challenge confronting our democracy is to fashion price and wage policies under chronic high-employment conditions which are judged equitable and which allocate increases in real income by means other than money wage rates disproportionate to the average productivity increase. There appears to be no way of achieving this result via conventional fiscal and monetary policy without also bringing about changes in price policy which would permit some part of the increase in real wages to assume the form of price decreases made possible by higher productivity and changes in wage policy which would roughly accommodate the rise in average real wages to the average rate of increase in productivity.

But again, as with the foreign balance, the rate of growth, and especially the rate of growth of productivity, becomes a strategic variable; for the possibility of fashioning and operating successfully a regime of steady (or very slowly rising) money wages hinges partly on whether real incomes are palpably rising. In this connection, it is an often forgotten lesson of economic history that periods of relative peace in labor relations have tended also to be periods of declining trend in living costs.

A historian is quite comfortable with this prospect, and it is time for economists to shake off the images of the inter-war years and the assumption that, somehow, in all circumstances declining price trends must always be linked to severe unemployment.

Given its partial but strategic role in the solution of this whole range of problems, it is worth, even in a brief survey of this kind, considering at somewhat greater length the prospects for productivity over, say, the coming decade. All of us, I assume, are duly impressed with the two most obvious encouraging facts in our situation. First, the extraordinary increase in the scale of science and technology and in the number of scientists and technologists in our society. These institutional and human facts give meaning to the burgeoning and increasingly fashion-

able research and development activities within the economy. Second, I assume we are all impressed with the rapidly unfolding possibilities of certain particular, relatively recent scientific breakthroughs—notably in atomic energy, electronics, and certain fields of chemistry. Over the reasonably long future, it is difficult not to assume that the potentials for the increase in productivity will be very great.¹⁵

On the other hand, in the more immediate future, there is some reason for caution in counting too much on these factors to lift from us the burdens of hard choice in making public policy. First, in both scale and apparent effectiveness, industrial research and development have historically been concentrated in a relatively few sectors closely linked in their origins to modern science: aeronautics, chemicals, and electricity. And a great deal of contemporary research and development within these sectors is directed to fields of military interest from which the civilian economy benefits only in indirect ways. Second, the levels of income now enjoyed in American society appear to be associated with high-income elasticity demand for services, including government services, rather than with manufacturing industry. With all due respect to electronic office equipment and road-building equipment, the trends in new technology and in patterns of American consumption do not appear automatically to converge. Third, as Kuznets emphasizes, the introduction of certain major innovations has tended historically to be accompanied by massive construction requirements which, for a time, elevate the incremental capital-output ratio.

Taken together, these factors might limit, at least, the consequences for productivity of the constructive impulses which are operating.

In my view it would be wholesome, therefore, to place the issue of productivity high on the national agenda. It might be useful, for example, for private and public authorities jointly and systematically to examine the productivity potentials in the various sectors of the American economy with two objectives in mind. First, to see whether it might not be in the common interest to allocate increased research and development talent of the first order to those older and less glamorous fields where deceleration or decline has long since set in but where very substantial proportions of the nation's resources are consumed; e.g., housing, steel, textiles, and even automobiles. The objective would be to correct a little the natural tendency, familiar to economic historians, for the new, rapidly expanding fields to absorb a disproportionate percentage of first-class talent. In my view, we must now create a policy of productivity advance along a much wider front than in the

¹⁵ See notably the discussion of Simon Kuznets, "Capital in the American Economy: Its Formation and Financing," Chap. X (NBER, May, 1959, mimeographed).

¹⁶ See, for example, the author's *The Process of Economic Growth, op. cit.*, pp. 100-01.

past. Second, we might systematically examine the extent to which entrepreneurship in the various sectors is or is not effectively bringing to bear the potentials which already exist for increased productivity; ¹⁷ and we might then consider what tax incentives or subsidies might be created to bring average levels of productivity closer to best-proved standards, in sectors peculiarly touched by the public interest.

Among the particular sectors that deserve close examination is what might broadly be called staff work, both within government and in the private economy. Some of us hold the view that we Americans have carried over into staff work criteria of specialization derived historically from notions of scientific management which originated in the problems of running a railroad system, an army in peacetime, and a machine shop. This leads to overmanned staffs, with tremendous inertia built into them, consuming their energies in maintaining the *status quo*, obscuring the locus of responsibility in endless committees, radically damping the pace of innovation. The increasing role of government in all our lives as well as the increasing role of staff work in the private sector, absorbing as they do so high a proportion of first-rate human capital, may justify a serious examination of this prejudice.

In any case, it would be a mistake to assume that even a powerful upward movement in the aggregate sums devoted to research and development will automatically yield those changes in the rate of productivity (and in its sectoral composition) which are, in fact, needed to minimize the inevitable strains within American society over the next decade, as we confront our domestic and international challenges.

It may seem odd to commend productivity teams to a nation which still leads the world in productivity and which, for so long, has been able to count on high productivity as an almost automatic by-product of its evolution. But we must bear in mind that high productivity is not enough; it is the pace of increase that will help determine how easy or difficult it will be to meet our domestic and international challenges. And we should also bear in mind that the stage of growth which the United States has attained has altered the old connection between areas of high income elasticity of demand and high technological momentum. History appears to have decreed that, in order to remain a front runner, we shall have to continue to pioneer—in this case to pioneer in bringing about productivity increases along a broad front. And in facing this challenge we should not complain; for the grand lesson of

¹⁷ I have in mind here the systematic application of the kind of technique developed by Mrs. A. P. Carter, of Harvard, for measuring the range of technique and of productivity in the particular sectors.

in the particular sectors.

18 See, for example, E. E. Morison, ed., *The American Style* (New York, 1958), chapters by George F. Kennan and W. W. Rostow and the commentary of Richard M. Bissell, Jr.

economic history is surely this: a front runner's status is never automatically sustained. It must be constantly renewed.

My argument comes, then, to this:

- 1. Viewed from the perspective of a historian's concern with leading sectors, the potentials in the United States for high levels of effective demand and for high rates of productivity increase over the next decade appear excellent. Unlike the situation during the past two generations, however, there does not appear to be a close link between sectors of high income elasticity of demand and high technological momentum.
- 2. Now and foreseeably the United States is faced with challenges to both its position on the world scene and to the quality of its society. These challenges require increased allocations to public sectors. In addition, the United States faces the task of dealing with its foreign balance without an isolationist retreat and with inflation by means other than a radical damping in the rate of growth.
- 3. These challenges, which lie behind the present intense concern with American growth, must be dealt with by a revision in attitudes towards the allocation process which would make the marginal choice between public and private sectors more rational than it now is; by a direct approach to the problem of economizing international reserves as well as by lowering of outdated barriers to dollar imports; and by a revision in attitudes towards and procedures for setting both prices and wages.
- 4. While these problems will not be solved by an accelerated increase in GNP, they could all be substantially eased by an increase in productivity along a broader front than in the past. After a study of the potentialities in the various sectors, such an increase might be achieved by tax incentives or subsidies designed to increase productivity in sectors of particular importance to the public interest; by a more purposeful disposition of research and development efforts; by an improvement in the average level of entrepreneurship, notably in the older sectors of relatively sluggish technological advance; and by alterations in American staff work which would yield higher rates of innovation.

DISCUSSION

Paul A. Baran: The rapidly spreading discussion of American economic growth suffers seriously from its unfortunate "take-off"—to use Professor Rostow's favorite expression. Inspired by the notion of the so-called "Soviet challenge," it has been shunted into a blind alley by a particular interpretation of that ambiguous term which has been given wide currency in newspaper editorials and in the pronouncements of certain experts. There it has become customary to treat the expression "challenge" as a synonym of "threat," and thus to turn it into a new refrain in the dirge of the cold war. Cited as the reason for the necessity to accelerate the growth of the American economy, it suggests that all that matters is a more pronounced expansion of our gross national product, or even only of the gross national product's military component.

This, in my view, is a distorted and biased understanding of the word challenge, and it is urgent that we realize the other, more important connotations of the term. For challenge implies not merely, nor even primarily, a threat. It is first and foremost an invitation to perform, an appeal to rise to a task, a call to live up to a standard of accomplishment. I am not arguing here a point in semantics, and whoever wishes to challenge my understanding of the word challenge is welcome to do so. What is at issue is rather the nature of the performance that is required if the United States is to demonstrate to the American nation and to the world at large the superiority of capitalism to socialism—a superiority not in "killing power" but in the capacity to provide a stable framework for the health, happiness, and development of people. Only if such superiority is established (and not simply taken for granted) is it possible to say with Professor Fellner that "rather general social interest attaches" to the preservation of "the essentials of a decentralized market economy and of its political institutions."

Yet when it comes to judging capitalism by this standard, the growth rate of GNP can be considered to provide only one of the relevant criteria. For, given the absolute volume of American national output, its sluggish and uneven rise may be less significant as such than as a reliable index of the underlying economic and social condition. To be sure, even this wealthiest society in the world is far from the state of affluence which is suggested by the title of a recent best seller. As pointed out by the late Professor Sumner Slichter in his March 20, 1959, statement before the Joint Economic Committee, in 1958 one-fifth of the spending units in this country had incomes of less than \$1,890 before taxes and three-fifths had incomes of less than \$5,139 before taxes. Only one out of five spending units had an income of \$7,910 or more. Even if these numbers reflect a general standard of living much higher than that prevailing in the rest of the world, they hardly indicate the existence of merely "residual poverty" and the attainment of "freedom from want." This situation at home in conjunction with the state of starvation and disease endured by the majority of mankind living in the underdeveloped countries puts in sharp relief the callousness of the now-so-fashionable talk about the unimportance of further output increases and about the obsoleteness of the "conventional wisdom" as it relates to the husbandry of productive resources.

While there can thus be no doubt about the imperative need both at home and abroad for the largest possible increase of output, our economy has been keeping production markedly below the level which could have been attained with the human and material resources at our disposal. In approximately half of the exceptionally prosperous postwar years, unemployment in this country has been as high as 6 million and has reached disaster proportions in certain regions and for certain age, racial, and educational groups. It hardly needs to be added that this volume of unemployment, which is considerably in excess of what could be shrugged off as "frictional," has been accompanied at all times by an even larger proportion of underutilized productive capacity, Leon Keyserling has estimated (in his testimony before the Joint Economic Committee on March 24, 1959) that in the six-year period 1953-58 the loss of aggregate output has reached over 150 billion 1957 dollars. This staggering sum is probably no more than half of what the loss amounts to for all the postwar years. It should be realized that this output foregone, if it had been produced and appropriately utilized, would have sufficed not only to solve some of the most burning national problems but also to lift over the hump the underdeveloped countries in whose welfare and development we profess such a strong interest. And it should not be forgotten that the agricultural commodities which our policy of production controls, administrative regulations, and bonus payments contrives to prevent from seeing the light of day are estimated at a quantity sufficient to eliminate the caloric deficiencies in the entire undernourished world.

This prodigious underutilization of productive resources in the midst of universal want is, however, only one aspect of the posture which this country displays in the face of the Soviet challenge. The other side is the composition and the mode of utilization of such output as the economy does generate. It is open to serious question whether Keynes was right even with reference to Britain in 1935 when he wrote: "I see no reason to suppose that the existing system seriously misemploys the factors of production that are in use. . . . It is in determining the volume, not the direction of actual employment that the existing system has broken down." (The General Theory of Employment, Interest and Money, page 379.) But in any case, there surely can be no question about the inapplicability of this dictum to the United States of 1959. The relevant facts are well known and call for no elaboration. It is sufficient to recall some of the more striking statistics. In 1956, while automobile transportation absorbed 27 billion dollars, education (private and public) commanded 15 billion; while 3 billions worth of resources were used for recreational purposes of all kinds, 600 million were devoted to books; while basic scientific research was assigned 500 million, the services of stockbrokers and investment counselors were valued at 900 million; and the combined budgets of universities and colleges were a fraction of the outlays on advertising. Is it astonishing or incomprehensible that the cultural, moral, intellectual life of the country reflects to an ever increasing extent this state of affairs? Can one expect the propagation of truth, honesty, and a sense of national purpose among people exposed to an incessant barrage of advertising dedicated to the promotion of a remedy against "tired blood"—the concoction that made Charles Van Doren famous? Can one hope for the development and growth of reason and intellectual ability and integrity in a youth tutored by illiterate educators, brought up on violence and murder and crime on the TV screens, in the newspaper headlines, in the comic books, and facing on every side the irrationality, the destructiveness of the existing economic and social order? It surely is hard to face the Soviet challenge on this basis—to establish the superiority of capitalism to socialism on the strength of this cultural, moral, and intellectual achievement.

While not taking explicit cognizance of this general condition of the nation, the papers of Professors Fellner and Rostow address themselves to a search for remedies against the undeniably existing predicament. Professor Fellner, considering the growth rate of GNP to be "a pretty good 'proxy'" for what really matters, is concerned primarily with finding means to increase the rate of growth of GNP, and his solution of the problem is as simple as it isto me, at any rate—unconvincing. His advice is to reduce markedly the corporate income tax, since "this would strengthen incentives, and much of the tax saving would go into capital formation (largely through reinvestment)." But are we justified in believing that such corporate tax savings would actually be employed in this way? I do not think that it could be demonstrated that corporate investment activity (housing apart) in the postwar period was stymied by lack of capital. What is more, Professor Fellner's expectation of an increase in corporate investment in response to larger corporate liquidity is wholly unrelated to his own finding of ubiquitous "noncompetitive forces on the supply side" of the economy, and to his own observation that "in retrospect the present period will rather generally be interpreted as one in which we have failed to fight a harmful concentration of market power. . . ." But since the investment policies of monopolistic enterprises are governed not only, and not even primarily, by possibilities for internal financing, one would think that the growth and proliferation of monopoly had something to do with the volume and direction of investment. This problem is, however, not even referred to in Professor Fellner's paper. Nor is there any attention given to another, perhaps even more worrisome, aspect of the matter: Even if the device should work, and a larger volume of corporate investment could actually be induced by an appropriate taxation policy, is there any reason for supposing that this investment would flow into what might be considered socially desirable channels? Isn't there a larger probability that we would get "more of the same"—more sumptuous office buildings, more gadgets, more fins, more remedies against "tired blood", and "sour stomachs" and more Charlie Van Dorens to sell the stuff to a captive public?

As if to demonstrate the proverbial diversity of economic opinion, Professor Rostow takes a tranquil view of the slow growth of the American national product but is disturbed over its allocation. The trouble with the latter, he feels, is that too large a share of gross national product remains in the private sector of the system, with, conversely, too small a share becoming available to

its public sector. This view, which has been given much prominence by the writings of J. K. Galbraith, raises in my mind a number of important questions.

In the first place, it seems to be most doubtful whether the dichotomy between the private and the public sectors comes anywhere near to encompassing the complexity of the resource allocation problem. Indeed, I am by no means certain that an increase of the public sector at the expense of the private sector represents under all circumstances—and in particular in this country at the present time—a desirable reallocation of resources. This would depend not only on the method by which such a reallocation were to be accomplished but also, and decisively, on the use made of the resources available to the public sector. For the mere fact that there is very little to recommend the mode of resource utilization prevailing in the private sector does not constitute a blanket endorsement of whatever employment might be given to resources in the public sector. Thus it is a tragic truth that all the waste and all the destruction of human and material resources that take place in the private sector of our economy are definitely preferable to an expansion of the public sector if such expansion were to be used for the building up of a larger military establishment and for supplying atomic weapons to irresponsible foreign governments—as is urged by many influential public figures. Nor can it be taken for granted that the extravagance of the private sector is much more deplorable than what has been happening in the name of American foreign aid to the Philippines and to Laos, Formosa, South Korea, South Vietnam, Pakistan, Iran, and Greece. And to take an altogether different example, it is by no means clear that even significant increases of appropriations to public education would not do more harm than good unless accompanied by a drastic reform of our educational system, with the latter hardly dependent on budgetary considerations. In other words, the insistence on the importance and urgency of resource transfers to the public sector is only justified if there is a strong basis for the conviction that they will be devoted there to socially desirable purposes.

But let us make the heroic assumption that the problem to which I have just referred did not exist, and that there is no room for doubt about the beneficent employment of such resources as come under the control of public authorities. The questions immediately arise as to what it is that keeps the public sector down to its present dimensions and as to what can be done to enlarge it at the expense of the private economy. It is Professor Rostow's method of dealing with these problems that I find most bewildering. If we shed our amiable academic terminology-stop talking about sectors, resource allocations, marginal adjustments and the like-and get down to brass tacks, what is at issue is a more or less significant increase of the share of the private product that is currently appropriated by the state. Such an enlargement of the government's take—unless wholly supported by a systematic, planned effort at an increase of aggregate output—can only be realized by the confiscation of an additional slice of private incomes. The bill would have to be paid by somebody, and, while one could expect considerable and at least partly successful efforts to shift a large part of the costs upon the majority of the people,

the profits of business and the revenues of the power elite could hardly escape being affected. There is, in other words, a pronounced and inevitable conflict between the expansion of the public sector and various, more or less powerful, private interests. Yet these interests are not even mentioned, let alone analyzed, in Professor Rostow's paper. We are told that we have to re-do our price structure, refashion our wages, redeploy our profits, revamp our entrepreneurship, reapportion our resources, with all of these categories being treated as if they referred to marbles which can be pushed around at pleasure. But a price is not only paid but also received; profit is not only an accounting concept but income; entrepreneurship not only a term most useful these days in drafting applications for research grants but the actual management of corporate business; and productive resources are not free gifts of nature but private property. All of these concrete elements and relations which constitute the basis of economic and social life appear in Professor Rostow's theorizing as disembodied entities obeying mysterious laws of movement. Although it is the outstanding characteristic of capitalism that people do not control the economic system but that the economic sysem controls people, Professor Rostow finds the "root cause" of our difficulties, not in the nature of our economic and social order, but in "certain American habits of mind." Accordingly the explanation of the way in which our productive resources are used is not sought in the prevailing system of ownership, not in the working principles of a market- and profit-determined economy, but in our "concepts," which in turn are produced by an "interplay of intellectual and political features of the American scene." Thus the impetus of the spirit takes over from the drive for profits, the interplay of concepts substitutes for the competition in the market, and habits of thought take the place of regularities of the historical process. This kind of social science from which society is abstracted and this kind of economic history in which there is no longer room for economic interests was recommended in one of Professor Rostow's recent publications as an alternative to Marxism. And an alternative indeed it is. But not one which would tempt me to make the switch.

Goran Ohlin: Apart from being presented at the same session, these two papers have surprisingly little in common. Since there is so little overlap they cover a great number of topics, and I shall not even try to review them all to indicate agreement or disagreement. I shall confine myself to points I have found obscure and difficult to understand.

Of the two, I suspect Professor Fellner's paper addresses itself most directly to the set question, but since I think I understand what he says, I shall, with some regrets, pass it over. I find it more difficult fully to understand Professor Rostow's more general survey of the prospects for American economic growth, and my principal query refers to one of the elements in what we may now, I trust, call the Rostow doctrine.

The question I wish to pose is simply: How does one identify a leading sector? The leading sectors, as I understand it, are propelled chiefly by innovation; they are new industries in early stages of growth, imparting momentum to the rest of the economy and carrying it along for a while before

retardation sets in and they are succeeded by others. The railways, the steel industry, sometimes the chemical industry are the ones usually cited for different periods. This is reasonable enough, but the thing that strikes one is how conventional and arbitrary these choices of a few industries seem, how they ignore the vast complexity of industrial life and the vast amount of innovation in a great many areas. We must of course try to distill out of that confusing reality some simple and important traits, but the industries we tend to single out for special attention are, I suspect, only those which correspond to a simple and preconceived—but for that matter possibly fairly correct—notion of the nature of our industrial system. But how far should one go in simplification? Should we be content with the assumption that the leading pace setters of the economy are few and far between or should we stress the diffuse nature of innovation and productivity growth and admit that to focus attention on a few sectors only is a more or less desperate attempt to impose order on our experience in order to interpret it?

By singling out such a small number of growth sectors, Professor Rostow creates an impression of discontinuity which is highly artificial. And the statistics are maddeningly recalcitrant when one tries to confirm ideas of this kind. The long pulses in the rhythm of economic growth which Professor Abramovitz and others are investigating do not seem to lend themselves to an interpretation in Schumpeterian or Rostovian terms. And Professor Rostow himself has stressed, in another paper, how difficult it is to give an exact meaning to his concepts of primary, secondary and derived growth sectors. Today he has repeated that "their exact statistical identification" is extremely difficult. It is perhaps naïve to ask, how then do we identify them? But so much of Professor Rostow's analysis of present and future growth problems rests on his discussion of the nature of the leading sectors in recent decades that the question must be put.

After 1910 or so, Professor Rostow says, we have been in a phase of growth which has been dominated by the diffusion of new patterns of consumption, by the spread of the motorized and mechanized suburban household. The leading sectors of the economy, he implies, have been those associated with the manufacture of durable consumers' goods, household gadgets, automobiles, etc. Rapid growth of output in these lines stimulated productivity increases and played in with a group of significant innovations in the electrical and engineering industries, in chemicals, petroleum, etc. Now, when this pattern of life has become widely spread, consumption is on the margin moving in other directions, toward babies, services, social overhead capital and leisure. In these directions, productivity is less likely to increase spectacularly, and the prospect is one of retardation of growth, although this may be offset by intensified research and development.

Professor Rostow is always persuasive, and I find him particularly so when I think he is wrong and try to decide why. I do not know precisely what he means by saying that recent growth has been dominated by the diffusion of household gadgets, automobiles, and the rest. But if he is saying that the prime engines of growth were to be found in the markets for durable con-

sumers' goods—then I am doubtful. The notable technological developments to which he points in electricity and power use in general, in petroleum, etc., have obviously been at least as closely associated with producers' goods industries as with the manufacture of durable consumers' goods. On the other hand, it has obviously also been important that consumption patterns took the form they did, that durable consumers' goods which the new technology could turn out efficiently have been both income elastic and for that matter price elastic. When a higher proportion of the community's income comes to be spent in areas such as services where productivity increases are less spectacular, this does of course tend to slow down growth, other things being equal. But this is not a tendency which sets in suddenly. As Fourastié has stressed so strongly, income elasticities tend to be inversely correlated with productivity advances. I cannot quite see Professor Rostow's historic link between the new consumption and the new technology suddenly snapping now. Consumption patterns have been moving fairly smoothly towards a higher proportion of services, and increasing prosperity has already to a very large extent led to an increase in leisure. If we assume that working hours had remained unchanged in the last fifty years but that output per man-hour had nevertheless taken the course it did, per capita output would have tripled. Actually, it only doubled over the half-century; so roughly half the potential increment was taken out in the form of increased leisure. One is almost tempted to call this a leading sector.

I would have found it more natural if Professor Rostow had followed his practice for earlier periods and identified the leading sectors of this century in some fairly conventional manner. It is in the basic sectors of our industry that much of the spectacular technological advance has occurred, and this has had an impact on production functions in all industries, not just those which manufacture durable consumers' goods, and I suspect the universal applicability of many of these gains lies behind the rather uniform acceleration of productivity after 1919 that Kendrick's figures show. In Professor Rostow's stage theory of economic growth this has been an age of high mass consumption, and there is of course a neat symmetry in the appointment of consumption as the dynamic source of growth for that era. But I cannot help feeling that it leads to a peculiar emphasis. Consumption seems to have played a far more passive and permissive role than the scheme suggests—not so startingly different from that which it has played before and will continue to play.

As for the future, there seems to be no shortage of growth sectors of a fundamental industrial character; and even if the continuing shift in consumption patterns exercises a retarding influence, this does not seem to warrant the sharp contrasts in Professor Rostow's picture. And even on the consumption side there are factors that point in the opposite direction. Leisure is not likely to increase as spectacularly as in the past and it is hard to say what the population boom will mean. Professor Rostow suspects the widening of the capital structure and the type of demand which the baby boom produces to be less of a stimulant to productivity. But in the past, the periods of rapid population growth seem to have been periods of great productivity increases.

But finally, what if the rate of growth slows down? Neither of the two papers really questions the desirability of rapid growth, although Professor Rostow touches on the diminishing marginal utility of real income. It does seem clear, however, that the affluence of our society considerably reduces the urgency of a high growth rate. Assuming reasonably full employment, the welfare gains of rapid growth will not be as great in the future as they were in the past. The benefits Professor Rostow sees in rapid growth seem rather secondary and ephemeral. It would help in the solution of a number of other problems: the necessary increase of public expenditures, the control of inflation, the strengthening of the balance of payments, and so forth. But the prospect of indefinitely continued growth at high rates is by no means a wholly pleasant one, and I do not know why one should not be able to assume that growth can sometimes be too rapid for the good of a society.

RUTLEDGE VINING: The remarks of Mr. Fellner which most prompted me to thought are those referring to the likelihood of a mistake being made by certain persons who are about to exercise a choice. He speaks of these persons having "to choose between broadening the scope of our antimonopoly policies, on the one hand, and resorting to comprehensive direct controls on the other." If they should choose the latter alternative, it would be a mistake; moreover, it is one which they "are likely to make." Later, he alludes again to this unhappy likelihood of men failing to apprehend and reliably assess the implications and consequences of their actions. Only "in retrospect" will they see that in the actions they will have taken they will "have failed" to avoid a "harmful" something that might have been avoided, and they will "have failed to provide" something else in "sufficient" quantity that might have been so provided. The mistake will not be "irreparable." But "the detour over greater centralization could be avoided" without "abandoning" the objectives which motivate the mistaken choice of "centralization."

A mistake, I suppose, is a class of rational actions—a mistake being said to occur if an action is taken that would not have been taken had the implications and consequences been fully anticipated by those who choose the action. Mistakenness lies in oversight and misapprehension. Only in retrospect—this would be the idea—do the mistaken realize what they have done.

Think, now, what an interesting thing it is that Mr. Fellner is doing. He is seeing aspects and features of an expected outcome of a possible choice that men who exercise the choice cannot now discern. And he is sensing somehow the disapproval and distaste that these persons would experience were they able fully to anticipate what will tend to emerge as a consequence of the choice which he predicts that they will make. In short, he is practicing our unique craft and profession of political economy—directed as it is to the timely recognition of emergent mistakes.

To pursue the idea further, note that it is the mistake that Mr. Fellner predicts that Mr. Rostow recommends. And recommending such, Mr. Rostow bends his efforts to forestall what he deems to be a mistake of neglect that Mr. Fellner hopelessly urges the choosers to make. Mr. Fellner's outline of proposed actions is remindful of the stark and stolid individualism of Henry

Simons; Mr. Rostow's is cheek by jowl with that of Mr. Galbraith.¹ Administrative action such as Mr. Rostow recommends surely entails an imposition of the direct controls designated by Mr. Fellner as a mistake. And Mr. Fellner's is apparently the "concept of political economy" which acts as a deterrent to such "forehanded flexible" handling of "threats to the national interest" as is urged by Mr. Rostow. What would appear to be the Fellnerian "attitudes towards the allocation process" Mr. Rostow would revise in order to "make the marginal choice between the public and private sectors more rational than it now is." And it would be a patent mistake for the choosers to forego making "an allocation more rational than it now is."

Here, then, are mutually contradictory designations of mistakes to be avoided, and I raise now for consideration how one might proceed to assess the conflicting advice that is tendered. Mr. Rostow, I think, has confounded matters at the very outset of his deliberations; and we shall consider how one may infer this to be the case.

Let us begin by remarking to whom Messrs. Fellner and Rostow direct their advice, the nature of the authority and motives of these persons, and the explicit form and character of the alternatives confronting them.

One may note that the content and address of either of their papers are exactly as though it were being presented before a committee of legislators. The papers pertain to choices which legislators are obliged to make and are but extensions of discussions among such functionaries—not boards of directors of private or public corporations or agencies, and not judges or juries trying men for wrongdoing, but legislators. The pure prototype legislator is neither a chooser of a strategy—as is the director of the agency with a well-defined end—nor is he a tester of a well-defined hypothesis—as is the pure prototype judge. Legislators are men authorized by members of the commonwealth to act on their behalf in the choice of something analogous to the "rules of the game," the members themselves being the players of the "game," the rules defining which they thus jointly choose by proxy.

It is a matter of fact deserving of emphasis, I think, that the thing directly chosen by legislators, being a system of legislative enactments, bears the form of a system of rules. The physical embodiment of the alternatives confronting legislators is seen in systems of constrictive and prescriptive rules, designations, and definitions the choice of any of which establishes constraints and conditions upon the personal choices of ends and means that are exercised by individuals.

Now a choice of a system of rules is analogous to a selection and performance of what in probability theory is called a conceptual experiment, which is also a system of rules. And to each conceptual experiment there is what is called in this theory a sample space—which is the collection of all possible outcomes of a performance of the experiment. To each possible outcome there

¹ Incidentally, one may be led by news releases and prevalent conversation to characterize the Galbraith-Rostovian political program as the new socialism. The old socialism was centered upon the now admitted mistake of emphasis and reliance upon public ownership of capital as the means to high and massive living. In the new socialism, this is replaced by the possibly mistaken insistence upon public controls of expenditures as the means to a high and secure "quality of society."

is a probability—interpretable as a relative frequency of occurrence. And in terms of the possible outcomes, various random variables may be defined, for any of which there is a distribution, perhaps specifiable in terms of parameters like the mean value and variance.

It is in terms of a selection of defined random variables, their distributions and expected values, that one may describe aspects of the expected outcome of a performance of a conceptual experiment; i.e., features of the performance properties of that system of rules. Similarly, it is in terms of a selection of defined variables, their distributions and expected values, that one may describe and discuss the expected outcome of legislators' choosing a particular system of enactments. The point to be emphasized is that legislators do not directly choose values corresponding to any particular selection of variables. The choice exercised is a choice of a system of rules, entailing a choice of expectations extending beyond anything that can be comprehensively described by the expected values of any finite selection of variables; and any selection of variables, random or otherwise, serves only as a means for describing a limited range of aspects and features of the properties of a particular system of enactments.

The fundamental distinction between the conceptual experiment with its corresponding sample space, on the one hand, and a selection of random variables in terms of which limited aspects of outcome are described, on the other, is explicitly made in probability theory. The corresponding distinction is not explicitly made in the theory of political economy; and to its neglect can be attributed, I think, such a trail of begged questions as is exemplified in Mr. Rostow's paper.

Note the contrast in this respect between the two papers.

Mr. Fellner submits for the legislators' consideration an outline of a modification of the existing system of rules. To have Mr. Fellner's proposed alternative before us, we need only turn to certain statute books and make prescribed alterations in various numbers, definitions, and stipulations. There is thus presented a pair of alternatives between which the legislators may choose; and the natural next step in a discussion of this legislative choice has to do with how the outcome of the adoption of this proposed alternative may be described, predicted, and evaluated. This involves a selection of variables in terms of which this description may be presented; and Mr. Fellner employs for this purpose a selection which I need not review.

Now Mr. Rostow might contend that variables in terms of which he is inclined to view the really important possibilities are not included in Mr. Fellner's selection—that thus Mr. Fellner makes the mistake of neglecting essential Rostovian objectives. But Mr. Fellner might appropriately respond that this is not the case, but rather that he is aware of no particular system of rules the outcome of the adoption of which would include the attainment of such objectives without also including other features and aspects of outcome that would render this attainment harmful on the whole.

So much for Mr. Fellner. Now consider what Mr. Rostow does. He proposes that the choosers choose the following: an allocation of "sufficient resources to deter Communist aggression"; an allocation of "sufficient resources to

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social overhead capital"; a "control of inflation without a damping of the rate of growth"; "a concerted public and private effort to accelerate the rise of American productivity, . . . directed to the appropriate sectors"; a "fashioning of price and wage policies . . . which are judged equitable"; a creation of "incentives . . . to bring average levels of productivity closer to best-proved standards"; "a revision of attitudes towards the allocation process which would make the marginal choice between public and private sectors more rational than it now is"; "a revision in attitudes towards and procedures for setting both prices and wages"; "an increase of productivity in sectors of particular importance to the public interest"; "an improvement in the average level of entrepreneurship, notably in sectors . . . of sluggish technological advance"; "alterations in American staff work which would yield higher rates of innovation?"

Mr. Rostow counsels that these good things be ordered. The archetype legislator would perforce respond that this is no specification of an alternative subject to his choice but rather is predominantly a listing of variables in terms of which a limited aspect of the possible outcome of a choice may be discussed. Mr. Rostow depends upon the efficacy of "a concerted effort of political leadership" for the actual designing of the alternative, and in effect he admonishes leadership to go forth and find a set of constraints upon the personal choices of individuals sufficient for satisfying the stipulated requirements (sufficient, appropriate, equitable, best-proved, more rational, particular importance, improvement, etc., being assigned suitable meanings). Suppose that such a system of constraints and prescriptions were found and imposed. What then of the aspects and features of outcome not accounted for by his selection of variables? Perhaps those on whose behalf such choices are made would come to realize in retrospect that neglected consequences and implications render mistaken this action of choice. And this, I believe, is the mistake to which Mr. Fellner refers.

PROBLEM OF ACHIEVING AND MAINTAINING FULL EMPLOYMENT

SOME QUESTIONS EMERGING UNDER THE EMPLOYMENT ACT

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I '

There is a striking disparity between the grand national purposes declared in the Employment Act of 1946 and the paralyzing squabbles that have erupted in the steel industry and that impend for the automobile and railway industries in 1960. As setting for an analysis of causes of this disappointing development and for promising means of combating or, if possible, reversing it, I submit several all-too-categorical propositions.

The Keynesian dialectic for a high-production economy sustained by the grace of compensating fiscal policy and stabilizing monetary policy has proved inadequate for dealing successfully with the postwar problems of our economy. We have been confronted with many operational dilemmas in trying to adapt particular pricing and incomedetermining institutions and practices to the higher price level which had been, in a very irregular pattern, induced by the tumultuous wartime developments and improvisations. Alvin Hansen admirably previewed the complex nature of the Employment Act problem in his Economic Policy and Full Employment (1947). Referring to inflation as "the immediate danger," he said: "In our modern, highly complicated economic order we are continually in danger. It is not easy to keep the system in balance. That involves not only fiscal and monetary controls, but also, among other things, a balanced wage-and-price policy, control of monopoly, promotion of high productivity, technical progress and, above all, social unity and cohesiveness. [Italics added.] Stability. maximum production, and full employment are not easily achieved goals. We are perhaps out of the kindergarten, but we still have a long way to go." (Page vii.)

Unfortunately, neither Hansen nor any great number of our fadfollowing profession felt moved to explore the private market prerequisites for full employment symmetrically with their explorations of the public control aspects. But thirteen years of experience, during which conditions have been very favorable and performance of the economy on the whole quite gratifying, have shown that, under the institutions and the mores of our enterprise economy, "opening the money spigot" wide enough to get full employment results in dangerous inflation and "reversing the money pump" drastically enough to prevent inflation produces intolerable unemployment. The continued rise in industrial prices and service rates during the 1957-58 recession while unemployment persisted or even mounted has now caused attention to shift to this field. This has given us the catch phrase "cost-push" inflation. I myself have been moved to label the phenomenon "institutionalized" inflation; that is, an inflationary trend built into the market process through the institutions of the large corporation, the big union, and big government sensitive to the political pressures of special-interest groups. This institutionalized inflation embraces not only the conditioning structures of business, labor, and government but also personal attitudes and group practices—the mores or ideologies of the elite groups which, as corporation executives, union leaders, Administration and Congressional officials, constitute our effective cadre of policy-makers.

To grasp the complex realities of institutionalized inflation and gauge the possibilities of achieving sustained high production without periodic disruption of price-and-income alignments, our American "mixed" economic system may be visualized as a global process comprising a hemisphere of private business administration and a complementary hemisphere of public economic administration. This public hemisphere is divided into quarter-spheres of credit administration and spendingtaxing administration. The private hemisphere is similarly divided into quarter-spheres of capital administration or price-investment policy and labor resource administration and wage negotiation. These four quarterspheres of the economy, though separable for many purposes of analysis, are intricately intermeshed in actual operation. Thus, there cannot be an effective demand-pull that is independent of the cost-pushes of speculative business enterprise and resource-owners' opportunism. Nor can there be an effective cost-push that gets very far in defiance of the power of appropriation committees and credit agencies to "advise and consent." Fiscal policy is a powerful initiating and guiding force as it injects funds here and drains them off there. But also it is strongly conditioned by the price or cost situations brought about by the speculative and innovating activities of management and by the offensive and defensive strategies of organized labor. For example, cost of govern-

¹While recognizing the withering of the Invisible Hand and moving to repeal Say's Law, we should take some care not to throw out realism's baby with the theoretical bath water. Labor's wage advances and management's markups are income generating, and pro tanto demand creating or fortifying—so long as the Fed and/or the fisc continue to put up the chips—and productive capacity is not allowed to breach the dam of price maintenance.

ment payroll and procurement and the yield of any tax structure are markedly affected by the level and structure of prices and of incomes brought about by the administrative policies of management and of organized labor and their articulations through collective bargaining.

To a very important extent, therefore, both fiscal policy and monetary policy are the captives of market policy or, stated more precisely, captive to market behavior, with its decisive administrative component. To recognize this fact of our economic life today is to realize the sterility of the aggregate demand formula in the unique causative, explanatory, and correctional sense in which it has been so freely used in recent years. The tough questions ultimately raised by the Employment Act are not primarily or dominantly those of public action to compensate for failure of the private economy to effect sustained high production. They are basically questions of how to forestall such failure by improving the institutions of the market—for goods, for services, and for funds —and how to raise the mores of individual and administrative responsibility2 to a level compatible with the character of modern industry and trade. While permitting and indeed facilitating such concentrations of private economic power as are needed for efficiency in handling our fast-advancing technology, we need also to effect disciplines (i.e., group behaviors) in a domain that we have debouched into but by no means mastered. Our objective should be to preserve that "free competitive enterprise" premised in the Employment Act, not as a mere abstract ideal, but to make that freedom and the competition among larger operating units that results therefrom achieve the high economic goal of maximum consumer real purchasing power better than atomistic competition ever served the much less ambitious objectives of Smith's, Ricardo's, and Malthus' time. Big-unit competition must find an optimum blend of internal constraint, that achieves discipline in its own ranks, and such co-operation among special interests as will promote a constellation of private prosperities as integrated parts of maximum national prosperity.

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Concentrations of private economic power are a perfectly normal manifestation of the economics of enterprise. Under our traditional principle of free private enterprise we have permitted the ambition, the ingenuity, and the daring of business leaders to develop the industrial and the commercial corporation to the point where a single firm may hold assets, develop money flows, and control personnel to an extent that exceeds the economic power of any one of perhaps a quarter of our sovereign states or of many a foreign country. The right of both

 $^{^2}$ I do not say social responsibility because I believe that the economist qua economist should keep his analysis on the operative or technological rather than the moralistic plane.

horizontal and vertical integration permitted under the law (despite occasional curbs) has contributed powerfully to the stimulating of production, the enlargement of employment opportunities, and marked rise in the real purchasing power of consumers. Its impact on national stability has been more equivocal.

Paralleling the development of the giant corporation, we have, under our traditional principle of free private enterprise, permitted the ambitions, the ingenuity, and the daring of labor leaders to build up unions of size and power in many regards approaching and in some regards surpassing those of the largest corporations. Much as the "infant industry" argument in the manufacturing area in time became an absurdity, so the "underdog" justification for public policy further enlarging the rights allowed to, and the benefits conferred upon, organized labor has become obsolete.

The workability of a system of free competitive private enterprise under modern conditions pivots on the institution of collective bargaining, and it had seemed an almost axiomatic proposition that all that was necessary to give bargaining between units of unlimited size the same beneficence as that traditionally ascribed to atomistic bargaining was for private action to promote and public authority to permit structures that would achieve "equality of bargaining power." It would be hard, however, to concoct a phrase more elusive in interpretation and more untoward in its application than this one—unless it be "bargaining in good faith." Instead of promoting market equilibrium through rational juxtaposition of supply realities against demand realities, each side sought to maximize its fire power to force a decision which would be to its financial advantage. The consequences of this line of development seem now to have brought us to the distressing alternatives of inflation or return to the cold war of the class struggle.

Rather than countervailing against each other to achieve high production and price stability, great concentrations of economic power become a prime initiating and aggravating force of inflation. Instead of an apparatus of wholesome adjustment, we get a continuing race for more power on both sides and impasse when the summit is reached. Neither party is willing to admit that collective bargaining fulfills its role as balance wheel through "equality of bargaining power" if it has to accept contract terms below the level of its demands. Paraphrasing George Orwell's brilliantly satirical phrase in *Animal Farm*: Both pigs must be equal, but each pig must be more equal than the other.

Success of the industrial union tactic of striking that oligopolistic employer who appeared at the moment to be in the most vulnerable position or to have a recognized position of policy leadership moved the steel companies this year to confront the solidarity of the United Steel Workers union with the matching solidarity of the twelve major steel producing companies. But this strong riposte in the game of bargaining power promptly engendered a countermove toward a still larger solidarity among unions as a whole. Several of them passed resolutions to support the United Steel Workers in their strike, and the AFL-CIO and several individual unions not only gave unequivocal moral support but also voted substantial cash subsidies to increase the defensive power of the United Steel Workers.

Do we not here see the race for countervailing power generating a trend toward cartelization of industry by the back door that we have persistently turned back at the front door under our antitrust principle? Whether or not the Department of Justice will challenge this development remains to be seen. Thus far the monolithic labor suzerainty has been able to maintain substantial immunity from the antitrust laws. Something radical or at least showing sparks of inventiveness now needs to be done to check the erosion of that competitive flexibility that is essential for an enterprise economy to deal with real operative situations.

Our traditional theories of competition were developed long before these modern complexities had emerged. Edward Chamberlin's pioneer study of monopolistic competition took a long stride forward into the realities of today's commercial and industrial life. But the focus was on maximization of the profits of the business firm. There needs to be —and to some extent there has been—an enlargement or elevation of this type of theory to encompass maximization of the productivity and distributive dynamism of the whole economy. Public inquiries and private studies are now vigorously under way (notably those sponsored by the Joint Economic Committee and the Senate Subcommittee on Antitrust and Monopoly) to see if we can arrive at some actionable consensus as to what concentrations of economic power now permitted by law and administrative rulings are inimical to the intentions expressed in the Employment Act, and what steps we should take to validate those intentions. Never before has the practicing economist been vouchsafed so adequate and competent a body of analytical and empirical material for his professional synthesis. We should now be near a break-through on both the juristic and the educational front.

III

Both the analyses of economists and the attitudes of the business world and general public divide rather clearly into two broad schools of thought as to the market phase of our current national economic problem. On the one hand are the radicals or pessimists, who despair of getting really full employment and avoiding inflation without superseding the free market or substantially limiting the present scope of freedom in the product, labor, and money markets. They would resort to extensive price, wage, and interest rate controls. This defeatist position seems to me premature, though it follows not unnaturally on the heels of disenchantment with the oversimplified belief that the purposes of the Employment Act were to be achieved through the wonder drugs of fiscal and monetary policy alone. It reflects an impatience with the slow and difficult process of progressively improving our market institutions in the light of larger experience and changing conditions and of progressively improving the performance of private administrative agencies in those markets in the light of research and a broadening viewpoint. The proponents of price and wage controls look for quick and decisive results from resort to centralized decision making.

But such short cuts lead seductively to a fully authoritarian system. Experience with OPA, OPS, AAA, and indeed even much of public utility regulation seems to me to furnish ample evidence of both the theoretical shortcomings and the administrative difficulties of government control in the market process. No comprehensive rule book of price setting can be devised in advance by even the most competent team of market experts and economic professionals. However well conceived are the prices initially set at strategic spots, they impose unforeseen disturbances on major and minor commercial relationships. These immediately clamor for compensating adjustments. Control of the price structure creates demand for control of the processes of production and distribution. (See the rake's progress of agricultural "adjustment" acts.) Hope that market controls can be rationalized under a few broad principles or limited to a few strategic points proves illusory, and the system rapidly bogs down in a morass of detailed regulations, exceptions, grievances, and evasions. As for a stand-by apparatus, it is sure to grow costly during periods of inaction and be found obsolete when need for action arises.

The milder proposal that intended new prices or rates be posted and then held in abeyance while the public scrutinizes their justification and impact nominally substitutes the intellectual approach for the power approach to economic adjustment. But those whose critical judgment would be competent in the appraisal of proposed action cannot in any real and important instances become adequately informed as to the complex factors involved. The mere form of the price or wage proposal and the conditions of compliance present insuperable practical difficulties. If the steel companies were to make such an advance declaration of intention, it would not be sufficient for them to state a single price on basic steel because there are many grades and types of steel and specifications as to "extras," fabrications, terms of sale and de-

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livery, and the like. These could not all be set out in the price proposal, and whatever base price was finally set by the company in the light of public reaction could be materially modified in application through skillful manipulation of these escape possibilities. Similarly in the case of automobiles, is it conceivable that the companies could, months in advance of the introduction of a new model, inform the amateur public and enlighten their professional rivals as to the precise character of vehicle to which any specific price was to apply? The companies themselves are, up to the last moment of announcing the new models, uncertain as to what prices they can, must, or will name.

The labor aspect of the notice-and-waiting proposal is in some ways simpler than the price aspect. But with all the skill differentials, seniority rights, fringe benefits, and grievance procedures by which the basic hourly rate is intertwined, the practical use of this approach to wages (and work rules) seems slight. Nor does recent experience in the steel impasse encourage the hope that either management or labor would be responsive to public opinion even if it could be captured, measured, and weighed as to its internal variations.

But there is a more fundamental theoretical reason for eschewing the idea of a change of venue from the market to the government regulatory agency. The underlying premise on which the proponents of government intervention must rely is that the official price-maker possesses a magic touchstone for the performance of this task, whereas such prescience is not available to private price setters or price negotiators. The first of these premises, in my judgment, constitutes an overestimate, the latter an underestimate.

The plea for radical government regulation was presented vigorously before this Association a year ago by Ben Lewis. Burlesquing the economic sophistication required, and in considerable measure attained, by some executives of big business units, as "corporate conscience... marinated in goodness... as benevolent individuals construe goodness," he laid down the dictum that such managerial policy making "has nothing to do with economizing"; i.e., getting good allocation of productive resources:

It is neither the privilege nor the responsibility of any individual, however conscientious or statesmanlike, voluntarily to render economizing decisions in the name of society. . . . Economizing is society's job. . . . Economic decisions must be right as society measures right. . . An economy is a mechanism designed to pick up and discharge the wishes of society in the management of its resources. Sometimes we seek through government to make the market itself operate more effectively as an economizing instrument; sometimes we move positively into the market with our sleeves rolled up and force the economic verdicts which, collectively, we want. . . Through government we supplement the market; we also supplant the market. . . . The years ahead will see a great increase in conscious, collective, governmental controls and of governmental enterprise. . . . The conviction that great power over the economy must reside only in a government of the people will be acted on relentlessly, bluntly, and with force.

Passing over Lewis' fast semantic shuffle between "society," "the economy," and "government" and the socialist implication of his prediction, I find myself in considerable disagreement with his dichotomy between big business purblind to what the public wants by way of allocation of resources and big government suffused with full understanding of these wants, full wisdom in resolving conflicts among them, and an adequate apparatus for implementing its "right" answers. The anthropomorphic idea that either society or government can know, discover, or formulate "the public interest" is a figment of the imagination since "society" does not and cannot have an official spokesman, and the officials of government bring their own limited empirical knowledge and very considerable personal biases and special-interest affiliations into their vocation as policy makers. Congressional action is not based merely on honest debate among informed statesmen; it also reflects ruthless pressures of interest groups and sordid trades among "practical" politicians. This voice of the people is in only the most Pickwickian sense the voice of God. Though it is the only workable alternative to authoritarianism that democracy has found for the shaping of fiscal policy and the institutional framework of the market, it is thoroughly unacceptable as a substitute for profit-seeking, responsible, ad hoc decision making of and within business firms and labor unions.

ΙV

If, then, we reject the deceptively simple device of cutting the Gordian knot of our full employment versus inflation dilemma by the use of direct government price and wage controls, what positive program can we adopt? My answer to this challenge begins with a caveat. Zeal in attacking the problem of linking maximum production with dollar stability should be tempered with careful discrimination. "As prudent men we should not take hasty steps to alter an institutional system so deeply grounded in our traditions and so successful in meeting immediate postwar demands and opportunities. At the same time we should not be tardy in taking well considered steps toward correcting such deep-lying or slowly developed shortcomings as time has revealed in our modern system of free but highly organized industrialism."

Within such an interpretation of the needful role of the federal government in the private market, our positive program should be a vigorous implementation of the policy explicitly stated in the Employment Act; namely, "to foster and promote free competitive enterprise." This clause was not a mere political gesture toward threadbare tradition, but

⁸ Excerpted from the writer's testimony before the Senate Subcommittee on Antitrust and Monopoly Hearings on Administered Prices, Pt. I, p. 13, July 9, 1957.

rather was a correct reflection of a basic principle of American and Western European economic science—that free competition among the complex thrusts of supply forces and the diverse pulls of demand forces furnishes the optimum condition for attaining maximum productive use of the economy's resources and maximum consumer satisfactions. Four ingredients of a free enterprise program seem to me to be indicated: (1) integration of our sprawling and confused antitrust statutes under a basic policy law or Joint Resolution that declares a comprehensive principle of free competitive enterprise; (2) pressure for vigorous and consistent enforcement of this principle both through the Department of Justice and also the ancillary agencies of the Federal Trade Commission, the National Labor Relations Board, the Secretary of Agriculture (Capper-Volstead and Marketing Agreements Acts), and several independent commissions; (3) realistic studies by the economics profession of the fundamental theory of large-scale competition, and the use of this enlarged understanding for the guidance of courts in applying general statutes to particular situations; of Congress and of administrative agencies in perfecting our competitive institutions and current practice under them; and (4) systematic but nonpropaganda campaigns of general education of the various functionaries and the general public in the operative requirement of a free competitive economic system.

The integration of a consistent and comprehensive procompetition legal structure should begin with a clear-cut declaration that all parties and interest groups shall stand equal before the law of the land, that no segment of the economy-industrial, commercial, agricultural, labor, or financial—shall be immune from safeguards set up to prevent the abuse of concentrated economic power. This unification of our institutions of big-unit competition would then require careful re-examination of our many special regulatory laws to see that their provisions are in strict conformity with the general declaration of policy as well as recognizing the operative needs and peculiarities of the several business areas. Even so, the definitions and rules embodied in these special statutes can hardly be more than a skeleton of generalized statements of principle and intent which must have flesh put on its bones by enforcement authorities—who must exercise a considerable margin of discretion in interpreting a given state of facts in a complex and changing economy and in aligning regulatory action with declared policy.

To say this emphasizes the close interrelationship among all four of the ingredients I have proposed. For the selection of cases to be examined and acted upon by the Department of Justice or the independent commissions and the findings made by them must be guided by economic analysis as much as by legal technicalities or by ease of handling or prospect of a successful outcome. It is cause for congratulation

that there are today a considerable number of professionally competent economists in the staffs of these several agencies, that they draw upon the skills of brother economists in academic and business connections, and that the variegated wisdom of all three groups is made available to our lawmakers and amenders through the intellectualized apparatus that has been introduced into our Congressional system—and that is still growing. This is all the more important because so many vital questions of both corporation and labor practice are still in so ambiguous and indeterminate a state.

We do not have any economic pope who is in a position to give us an infallible answer, for instance, as to the competitive or noncompetitive impact of conglomerate mergers or the lush proliferation of big companies into lines related only remotely if at all to the company's original business. Similarly on the labor side, it appears that outlawing the national wage contract would be found highly disadvantageous by some employers and a statutory "right to work" inequitable by many workers. Until we have something more closely approaching scientific demonstration in numerous cloudy areas, we will do well to limit the law to statements of principle and purpose and rely on judicial or quasi-judicial procedures to articulate declared policy with ad hoc puzzlement. In discharging this viral role, some courts now avail themselves of economic counsel in hance with their use of legal counsel; others prefer, in the bright blue yonder of the economic stratosphere, to "fly by the seat of their juridical pants."

While my emphasis on the usefulness of the economist as expert witness in litigation and as staff member or consultant in the legislative area may seem to be in the nature of a commercial for our craft, in fact it is a sober challenge to us to foreswear a good deal of academic boon-doggling in the name of research and come up with some illuminating answers or at least well-grounded and stimulating hypotheses as to the nature and potentialities for both good and harm of price and non-price competition between large economic units and some inventive proposals for capturing the benefits and avoiding the abuses of such massing of private power.⁴

⁴ But even under the institutions we now have and with the understandings we have already gained, we should be able to recognize and act upon a few extreme situations where concentrations of economic power are so massive—and still growing—that government should proceed actively, not merely to check, but to reverse them. On the corporate side, I would nominate the General Motors Corporation; on the labor side, the Teamsters Union (quite outside the issues of shady practices now under attack). Exemplary action in each of these extreme cases would not only serve as a warning to others who have not yet stretched so far the tolerances of our free enterprise doctrine. And, even more significantly, the size and importance of these cases would assure such thorough discovery proceedings and such appeal to economic analysis by outstanding experts by both prosecution and defense as would define national policy over the whole area and for a considerable time into the future. The logic of action in the two cases is not identical, but it is equally compelling—though it is not possible to elaborate it here.

V

In thus seeking to devise a model of privately administered pricemaking and wage negotiation compatible with the purposes of the Employment Act, can we discover any hard core of theory as to the basic nature of our problem which might furnish theoretical keys to its solution? I venture to suggest two hypotheses.

First, I am persuaded that a basic reason why an irresistible force of union cravings meets an immovable body of managerial prerogative is that the scope of decision making on wages and work rules has become too wide and its situs too far removed from the core issues that need to be resolved. This proposition, however, must not be mistaken as the premise for a sweeping proposal for corporation-busting or union-busting: it simply points to a discriminating realignment of functions. The issue as to centralization versus decentralization in the private hemisphere of our economy runs closely in parallel with the same issue in the public hemisphere. While certain functions such as defense, international relations, and fiscal policy must be and remain the functions of government, in the great body of operational matters, both civil and criminal, we find it better to let local autonomy decide upon patterns of life which free citizens find best adapted to their peculiar circumstances and values. They may invent, experiment, learn by doing, and profit by the experience of other autonomous groups. Similarly, certain financial and related investment and technological policies of the modern corporation can most efficiently be centrally determined. Wage bargains and detailed work rules seem to me to fall in a distinguishably different category and to call for serious effort by all parties to discover principles and shape practices of local autonomy that would promote serviceable reconcilement of conflicting alternatives on both sides rather than creating a widespread, even national, impasse by trying to extend a single formula to quite unlike situations. Instead of the sort of centralization marked by the intrusion of AFL-CIO and its Industrial Union Department and by the industry-wide coalescence of major companies in the national wage bargaining which tied up the steel industry and the economy, we need more flexible differentiation of local situations and variety of accommodation through initiative, experimentation, and natural selection.

Of course any such suggestion will be greeted by the union hierarchy as a proposal to "weaken the unions" and evoke the real, and in its time, legitimate dread of the "company union." But note that I am not proposing the abolition of the national union or the multi-union federation—simply a restoration of powers of choice lost to the operational groups through the growth of union hierarchies. The national union will

still have a centralized role of general policy making, promotion, and enterprise leadership-including legitimate lobbying. It may formulate general policies as to work rules (as it now does) and propose wage levels and differentials, but with these tailored by the local to its own peculiar (environmental) conditions, and state of the employing company (as textile workers have done). The main point is that any strike vote shall be taken independently for itself by each union without constraint by others. This would not be a departure from practices which now obtain sporadically within the union movement, but would regularize and generalize the principle and would allow "the show to go on," recognize difference in operational requirements, assure selfdetermined values, and raise the dignity of local leadership. It would not have to rubber stamp central policy or seek promotion to the national hierarchy via such subservience. Union members who have felt they had to support the national leaders even in an "unpopular" strike might ponder whether their own interests would not be served better by contributing to the making of differentiated adjustments than by accepting authoritarian decisions.

Note, too, that my proposal includes a similar restitution of powers of decision making by the centralized corporation to its component operating units.

This diagnosis is not based on the negative proposition that bigness must always suffer from bureaucratization, but on the positive concept of economic statesmanship and promotion of the common good, about which there is such ambiguity. Much as officials of the national government should and, to a not always recognized extent, do have a national or statesmanlike outlook even amidst the practical necessities of reflecting local and interest-group pressures, so top executives of national corporations and top officers of national unions have a similar opportunity (and duty) to learn of the national process within which their management must function and of practicing two-way statesmanship: backward for the enlightenment of their constituent parts and forward to the enlightenment of government agencies as to the needs and response of their "factor" group and its underlying parts.

A second impediment in the path of fundamentally workable adjustments is the refusal of management almost universally to admit that the price of product (in its relation to volume of sales, number of jobs, and rate of profits) should be considered as an integral part of the wage problem. If management were to admit the functional inseparability of these issues, it should expect labor similarly to treat wages in their relation to volume of employment, productivity, and actual rather than formulated living costs. This issue goes to the very heart of the proposals currently being made in various forms for dealing with labor-

management deadlocks by means of "fact-finding" committees, compulsory arbitration, Presidential pressure for some "recommended" terms of settlement, or legislation providing for "a third chair [the public's] at the bargaining table." The simple fact is that corporation orthodoxy clings to the huckstering philosophy of early proprietary capitalism even in our new day of trustee capitalism. The progress of science and engineering has, in the area of technology, eroded the province of "trade secrets" almost to the vanishing point, and industrial executives have found that patent licensing is a practicable way of competitive life. We now need a counterpart development under which rational determination of critical cases within the price-income process could be approached by arraying the pertinent factual material and applying to it the best of professional expertise (with such fruitful variants of interpretation as economists would offer—even as scientists and engineers do). In a word, our society is now laboring under a serious cultural lag, and will continue to do so until we can bring ourselves to substitute scientific method for "muscle" in the conduct of big-unit industrialism.

VI

In the fourteen years since the war we have demonstrated only a very precarious kind of control over the built-in or institutionalized inflation that has evolved and only dubious and adventitious capability for full and sustained use of our national resources for production. We are now, very properly, probing into a variety of local and more or less discrete manifestations of this unsatisfactory performance, in the hope of improving economic structures and elevating economic practice. Along with these activities, and as a guide to them, we should also ponder deeply what are the over-all implications of the maximum production policy or doctrine to which we give lip service. Both Sir William Beveridge as the British prophet Isaiah of the full employment gospel and Alvin Hansen as its American John the Baptist stated the postulates in quite explicit terms. These prerequisites were: widespread economic sophistication and a pervasive spirit of social cohesiveness or national unity.

Reverting to Hansen's comment that, in terms of economic sophistication and social unity, we were, in 1947, "out of the kindergarten but still have a long way to go," what can be said of progress made since

⁶ Beveridge stipulated "a coordinated attempt, not a blind groping and pressing by numerous groups each of which sees only its own sectional interest and tries to exploit its particular strategic advantage"; voluntary arbitration of wage disputes; and both prices and wages "determined by reason, in the light of all the facts [employers opening their books to public scrutiny] and with some regard to general equities." Hansen gave us the admirable generalizations already quoted: "a balanced wage-and-price policy and, above all, social unity and cohesiveness."

then? The record seems to me to be seriously disquieting. The most charitable estimate is that we have moved on to the stage of teenage turmoil, with its undisciplined aggressiveness, adolescent frustrations, and intellectual confusions. There was a flash of economic insight in the steel companies' statement of the need to get the cost-price mechanism under control if we are to attain a competitive stance in world markets and competitive dynamism among domestic industries. But there was egregious economic stupidity (and even business stupidity) in their bland assumption that price and profit factors should be immune from any part in the readjustment process, while wages and volume of employment took the full brunt. There was a flash of economic perspicacity —even precociousness—in the argument of the vice-president of AFL-CIO that our basic problem is that of "learning how to distribute abundance" and in his reasoning that wages cannot be adequately analyzed —and adjusted—in isolation from price and profit information and analysis. But I do not find equal or even minimal grasp of the global economic process in his supposition that money wages can be advanced by larger and larger amounts on each contract renewal date, that those with the highest rates should get the largest new gains, and that each of the leaders get more than any of the other front runners.

I have already stressed the responsibility of our profession to provide clearer analyses of the complex problems of this real world and more cogent and practical proposals for positive devices for meeting them. But a means of selling as well as producing such intellectual merchandise is needed. This over-all factor or condition necessary to the successful practice of economic democracy is referred to by its proponents as the educational approach or "intellectualism on the economic front." It is tagged by its detractors as the hortatory approach, admonition, or the "jawbone attack." Only at our peril do we sneer at "creeping admonitionism" and declare that "statesmanship is for the statesmen" and thus that private statesmanship is "for the birds"—even in the day of multi-billion-dollar corporations and multi-million-member unions and the still more powerful solidarities of both.

It should be remembered that admonition is an art widely practiced by many who ridicule it when practiced by the professor or by the President. Business organizations carry on an elaborate campaign of admonition to their workers, their shareholders, and the public against the economic fallacies of labor, or government, and of "liberals" generally. The unions conduct a parallel crusade to educate the public as to the errors of capitalist practice and theory. They are now embarking on even more ambitious plans to admonish voters against endorsing measures or electing men who fail to understand the role and needs of labor in a full-production economy. And, of course, the political cam-

PROSPERITY UNEMPLOYMENT AND ITS RELATION TO ECONOMIC GROWTH AND INFLATION

By CLARENCE D. LONG Johns Hopkins University

I. Introduction

Two noteworthy and paradoxical features of the behavior of employment since 1947 may serve as the starting point of this investigation. One is the $7\frac{1}{2}$ million increase of civilian employment during those thirteen years; the other is the persistence of a high level of peacetime unemployment—one that has risen in three recessions to over 6 per cent and even approached 8 per cent briefly, and in December, 1959, equaled 5.2 per cent of the civilian labor force.

This paper focuses on the significance of this recent unemployment. A certain amount of unemployment, it is sometimes implied, is of positive value for stimulating economic growth and checking inflation. Has the recent unemployment served such a function? What has been the nature of the recent unemployment? How much of it is recession, how much prosperity, unemployment? Is the burden widely distributed, or concentrated on a small hard core? Where can we look for a better employment-generating performance of our economy—one that will yield a more rapid economic advance and a more stable wage-price level, with a lower residue of prosperity unemployment?

These are large questions and he would be a bold investigator indeed who claimed to answer them definitively in a short paper. Some of them have been before us a long time and most of them will remain unanswered for years to come. The data requirements are themselves formidable. A fruitful inquiry requires lengthy series of annual and monthly (or quarterly) estimates, based on household interviews or on unemployment insurance. The data should be available by age and sex, by color and family tie, by duration and number of spells of idleness, by industrial and occupational attachment, by whether workers are new or experienced, and by whether they occupy a full- or a part-time status. The concept of unemployment should be reasonably well articulated and should remain comparable from one month or year to the next.

²Walter D. Fackler, of the United States Chamber of Commerce, Hearings before the Special Committee on Unemployment Problems, United States Senate, Oct. 5-7, 1959, p.

<sup>47.

2 &</sup>quot;Prosperity" unemployment is a much more comprehensive concept than "frictional" unemployment. "Technically, the term 'frictional unemployment' is usually reserved for unemployment of short duration. . . ." Charles D. Stewart, op. cit., p. 281. Prosperity unemployment includes also hard-core and structural unemployment.

No such information was available before 1940: only data based on censuses conducted for one month or week every decade; on an occasional one-time sample survey for this locality or that state, each with its own concept; or on thin estimates of employments deduced from even more shaky estimates of labor force, to yield estimates of unemployment cluttered with residual errors. Beginning in 1940, monthly unemployment data became available from the household survey conducted first by the WPA, then by the Census; but these early reports rested on slender samples and doubtful techniques. In any case, the behavior between 1942 and 1946 was dominated by World War II. Only since 1947 can unemployment be viewed in the light of fairly adequate statistics and peacetime conditions.

These years have brought a treasure of increasingly accurate and detailed information, as a result of expansion in size of sample and improvements in techniques of interviewing households and evaluating responses. Household unemployment data can be supplemented by unemployment insurance data developed during the same period. The insurance data cover only about two-thirds of the unemployed and rest on a somewhat different concept; but they derive from complete administrative records rather than from sample interviews and are available for individual states and labor market areas rather than merely for broad regions. Neither type of data is ideal but both have their advantages and they place us in a far better position to understand unemployment than we have ever been before.³

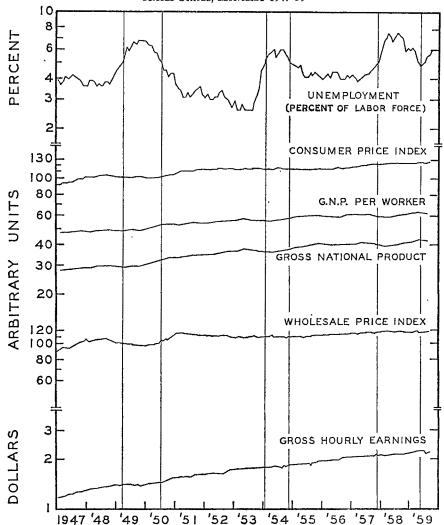
II. Unemployment and the Business Cycle

Three economic contractions have occurred since 1947 (Chart I). The first, which began in 1948 and lasted eleven months, was accompanied by a rise of unemployment which had started four months earlier, from a level of 3.6 per cent, and rose to a peak of 7.8 per cent in October, 1949. Thereafter, unemployment declined steadily until the spring of 1951. The second increase began in August, 1953, after the close of the Korean war and reached a peak of 6.2 per cent in September, 1954. From there it fell to slightly over 4 per cent in mid-1955 and stayed remarkably close to this 4 per cent until the recession which began in July, 1957. Unemployment actually began rising about four

³ For the most part these data are not to be found in any one place but are scattered through releases of the Bureau of the Census and the Department of Labor. A review of the Census data and their concepts will be found in my recent book, *The Labor Force under Changing Income and Employment* (Princeton Univ. Press, 1958), pp. 42-48; 388-99. Two recent computations and analyses of unemployment data are *The Measurement and Behavior of Unemployment*, C. D. Long, ed., Universities-National Bureau Committee for Economic Research (Princeton Univ. Press, 1957); Joint Economic Committee, Study Paper No. 6, *The Extent and Nature of Frictional Unemployment* (U.S. Dept. of Labor, Nov. 19, 1959), p. 69.

CHART I

Unemployment Levels in Relation to Output, Output per Worker, Prices and Wages
United States, Monthly 1947-59



months before the onset but did not gain much altitude until a month or so afterward. It reached a final peak in August, 1958. By June, 1959, just before the steel strike and thirteen months after the trough of the recession, unemployment had declined to 4.8 per cent, somewhat more than had prevailed that long after the previous two recessions but not far from the same percentage rate of recovery. During the second half of 1959, unemployment increased again, probably as a by-product of the steel strike.

Timing of Cycles in Unemployment in Relation to the Business Cycle, United States, 1947-59

A. Unemployment by Personal Characteristics and Nature of Unemployment Data TABLE 1

ıl		_ 1			1
Initial Claims (Number)		(IN LIMBORY)	+++1+ 20 10 0	4	+++
Temporary Lay-offs (Number)			+ ++++ 40%081	105	+++
New Workers (Number)		(inumber)	1+1+1	<i>ww0</i>	+++ 4.8 5.5
SEX	ales	25 and older	030520	∞ ⊣α	++1
Unemployment by Age and Sex (Number)	Females	14-24	+1+11	લળન	- 13 - 13
PLOYMENT BY A (Number)	es	25 and older	+ + + 204144	w07	++1
UNEMO	Males	14-24	+ + + 1011	423	++1 244 244 244 244 244 244 244 244 244 24
YMENT BY	UNEMPLOYMENT BY SEX; PER CENT OF LABOR FORCE		+1+++ 1.8.4.8.0	4	+++
UNEMPLO SEX; PE			+ +	2187	
TOTAL		State Insureds (Number)	+ + 1+1	777	-+1 -23
To	i	Per Cent of Labor Force	+ + 401144	132	++1
	Reference Cycle Turning Points*		Peak November 1948. Trough October 1949. Peak July 1953. Trough August 1954. Peak July 1957. Trough April 1958	Number of Leads. Lags. Coincidences.	Average lead (+) or lag (-) (months) Whole period Recessions

TABLE 1 (continued)

B. Unemployment by Major Industry Attachment

Other		+ 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	4	1 2233
Agricul- ture		++++ 0 44 0	4	++1 222 46 46
Services		+1+ +1 082084	621	1++1
Trade		330536 1 + 1 + 1 + 1 + 1 + 1	227	1+1 2 4000
Transporta-	Dublic Public Utilities	+ + + + + + + + + + + + + + + + + + +	2116	++ 0 0
Construc- tion		+ + + 4082124	1753	1++
MANUFACTURING	Nondurable Goods	+++ +1 1188048	∜⊣∺	++ 0 0
MANUEA	Durable Goods	+ 1 +1	000	1+1 22
Reference Cycle Turning Points		Peak November 1948. Trough October 1949. Peak July 1953. Trough August 1954. Peak July 1957. Trough April 1958	Number of Leads Lags	Average lead (+) or lag (-) (months) Whole period Recessions

* The reference cycle turning points (Nov., 1948, through July, 1957) are those marked off by the National Bureau of Economic Research. See Gerhard Bry, "The Average Work Week as an Economic Indicator," Occasional Paper 69 (NBER, 1959), p. 37. The trough date for the recent recession of April, 1958, was selected in this study.

Source: Seasonally-adjusted data supplied by courtesy of the National Bureau of Economic Research and the Department of Labor.

Several features of this cyclical behavior are noteworthy:

- 1. All three recessions have been reflected in sharp increases in unemployment, extending to all working groups, classified by age, sex, color, family status, industry, occupation, experience, or locality.
- 2. Unemployment has led the downturns, and lagged the upturns, of recessions. On the three downturns, total unemployment began to rise as much as four months earlier (Table 1). This lead also stands out in data classified by age, sex, or broad industrial group. It is even greater for new workers, temporary lay-offs, or initial claims to unemployment insurance. By contrast, in economic recoveries, unemployment has tended to delay its decline by one to six months. The delay has also occurred in detailed categories of unemployment, classified by age or industry, though there was a small lead for new workers, temporary lay-offs and initial claims.
- 3. The level of unemployment in peacetime prosperity since 1947 has been about 4 per cent: During January, 1947, through November, 1948, it was 3.9 per cent; during mid-1955 to mid-1957, it was 4.2 per cent. Only during the Korean war and the peacetime balance of 1953 was prosperity unemployment notably less.⁴
- 4. The recession increases have been less substantial than they seem. Unemployment doubled in 1948-49, more than doubled in 1953-54, and rose about four-fifths in 1957-58. The typical increase was 3.8 per cent of the labor force, or 2½ million unemployed. The unemployment peaks, however, have been relatively short lived, and the average recession excess of unemployment over the 4 per cent prosperity level was 1½ per cent during the first recession, ¾ per cent during the second, and 2 per cent during the third. Spread over the entire peacetime, they have been less than 0.8 per cent. Altogether, only one-sixth of the average peacetime unemployment since 1947 has been directly traceable to the business cycle; five-sixths has been of the kind that prevails even during the good years. The main problem of unemployment since World War II has been one not of recession unemployment but of prosperity unemployment.

III. Unemployment, Economic Growth, and Inflation

The thirteen years have seen a variety of behavior. Unemployment has fluctuated rather widely. Output and productivity have at times accelerated and at others slowed to a near halt. Wages and prices have alternated between rapid inflation, lagging advance, and near stability.

⁴There is the possibility, however, that the Census was underreporting unemployment during the peacetime half of 1953, as a result of a change-over in the sample: C. D. Long, The Labor Force Under Changing Income and Employment (Princeton Univ. Press, 1958), p. 47. Also Report of the Special Advisory Committee on Employment Statistics (Bureau of the Census, mimeo., Aug., 1954).

Has there been any relationship between these developments in unemployment and the changes in output, wages, and prices? Are there any levels of unemployment most favorable for rapid growth and stable prices?

As a first step we mark off, in the monthly data since 1947, periods in which unemployment was generally over 6 per cent; over 5 per cent, over 4 per cent, and 4 per cent or less (Table 2). The periods were so selected that unemployment was on the same level at beginning and end, higher in between (except for an occasional slight dip below). This device was chosen to insure that the periods would not differ widely in the degree to which unemployment was rising or falling, since rising

TABLE 2
OUTPUT, PRODUCTIVITY, WAGES AND PRICES AT DIFFERENT LEVELS OF UNEMPLOYMENT, UNITED STATES, JANUARY 1947-JUNE 1959

	Annual Percentage Rate of Increase				
	Output Real GNP		Wages	ages Prices	
			Gross	377 1 .	
	Total	Per Worker	Hourly Earnings	Whole- sale	Retail
A. Periods in Which Unemployment Began and Ended on About the Same Level Unemployment level generally: 4.0% or less.	3.5	2.2	7.3	2.6	4.0
Jan. '47 to Nov. '48	3.9 3.3	1.8	10.1	7.5 -0.6	6.3
Over 4.0%	4.0	2.8	4.6	2.6	1.7
Nov. '48 to Jan. '51 Nov. '53 to May '59	5.8 3.3	4.3 2.2	5.0 4.5	4.5 1.7	2.3 1.4
Over 5.0%	5.2	4.4	3.2	0.9	0.5
Mar. '49 to July '50. Jan. '54 to Jan. '55. Nov. '57 to May '59.	7.5 3.6 4.5	5.7 4.3 3.5	3.3 2.2 3.8	-0.7 1.0	$0.7 \\ -1.5 \\ 1.3$
Over 6.0%	6.7	4.9	3.5	-0.3	-0.05
June '49 to Apr. '50	$\begin{array}{c} 5.7 \\ 7.4 \end{array}$	3.8 5.8	2.3 4.4	$-1.2\\0.5$	$-1.3 \\ 0.9$
B. Periods in Which Unemployment Was Generally Rising Under 5.0%	$-5.1 \\ 0.4$	-2.6 1.5	3.2 0.8	$-1.3 \\ -1.1$	0.5 0.5
C. Periods in Which Unemployment Was Generally Falling Under 5.0%	7.7	3.0 6.5	7.7 6.2	10.9 3.1	5.9 0.7

unemployment is usually associated with lagging output and prices and falling unemployment with accelerating output and prices, regardless of unemployment level.

The results may be summarized in three statements.

First, the rates of advance of output, wages, and prices were related to the levels of unemployment.

Second, real gross national product advanced more rapidly the higher the level of unemployment; and this more rapid advance of GNP seemed due to more rapid advance of real GNP per worker. When unemployment was over 6 per cent, real GNP grew almost twice as fast as when it was 4 per cent or less. Per worker it grew more than twice as fast. At unemployment levels in between the rates of growth were roughly commensurate. So far as averages were concerned there were no exceptions: each higher level of unemployment brought higher growth rates of both GNP and GNP per worker. (However, individual periods sometimes yielded comparisons that went against the relationship. For example, the period of November, 1953, to May, 1959, when unemployment was generally over 4 per cent, yielded the same growth for GNP and a slightly slower growth for GNP per worker as the period of December, 1950, to December, 1953, when unemployment was 4 per cent or less.)

Third, the higher the unemployment level the less the rise of wages and prices. When unemployment was over 6 per cent, gross hourly earnings in manufacturing rose less than half as rapidly as when unemployment was under 4 per cent. And prices, which went up at an annual rate of 2.6 per cent for wholesale and 4.0 per cent for retail at the lowest level of unemployment, inflated very little when unemployment was over 5 per cent and even declined slightly when it was over 6 per cent. There were no exceptions to the rule that the average advance of prices was less the higher the unemployment level, but wages do offer one exception in that they rose slightly more when unemployment was over 6 per cent than when it was over 5 per cent.

Though periods were chosen so that unemployment began and ended on the same level, we must still be concerned with the fact that, whatever the level of unemployment, output and prices usually accelerated when unemployment was falling and lagged when unemployment was rising. Do the above results hold if periods when unemployment was rising and falling are each segregated into subperiods of high and low unemployment (Table 2, Section B and C)?

Section B shows that, when unemployment was generally rising, output and productivity rose while it was over 5 per cent and fell while it was under 5 per cent. Section C reveals that, when unemployment was

•

generally falling, productivity rose twice as fast while it was over 5 per cent as while it was under 5 per cent. Similarly, though of course in opposite direction, with wages and prices with minor exceptions. Hourly earnings⁵ and prices tended to rise more (or fall less) when unemployment was below 5 per cent than when it was above 5 per cent—both when it was generally rising and when it was generally falling.6

Altogether, whether unemployment was rising or falling, a high level seemed strongly associated with accelerating growth and stabilizing prices. Nearly 40 per cent of the rise in real GNP, and half of the rise in real GNP per worker for the thirteen years occurred during the three and a quarter years when unemployment was over 5 per cent. Only an eighth of the wage rise, a tenth of the wholesale price income, and a thirtieth of the consumers price increase occurred during these years, which made up a fourth of the over-all period.

IV. Possible Explanations for the Apparent Unemployment Effect

Was the Effect Due to Hidden Changes in Inputs? Hours per week put in by the average worker tend to rise before the upswing of employment in the recovery of the business cycle.7 There are also cyclical changes in the quality-mix of the employed labor force. Could these rather than the higher level of unemployment as such be the explanation for the more rapid growth of productivity?

A full answer waits upon a more detailed study which must contend with serious difficulties in the quality and quantity of labor and other inputs and must make use of monthly or quarterly data. Meanwhile, we rely on the annual data of John Kendrick,8 which undertake to measure output per unit of labor input, taking account of changes in hours and in quality of labor measured by different levels of compensation. Kendrick also computes a total productivity measure that attempts to take

These results were also upheld, though weakened slightly, when the percentage changes in output, wages, and prices were deflated by the percentage changes in unemployment.

Gerhard Bry, "The Average Workweek as an Economic Indicator," Occasional Paper (NBER, 1959), pp. 4-16.

B John W. Kendrick, *Productivity Trends in the United States* (NBER, 1959, mimeo-

⁵ Gross hourly earnings of manufacturing production workers, including premium pay-Gross hourly earnings of manufacturing production workers, including premium payment for overtime. Data excluding overtime pay are available since Jan., 1953 (Survey of Current Business, Business Statistics, 1957), p. 74; 1959, p. 76. These reveal patterns very similar to those of the gross hourly earnings; if anything, they support more strongly our finding that periods of higher unemployment were periods of slower advance in wages. In addition, hourly earnings data are available for all industries, including trade, services, government, and agriculture, adjusted to eliminate the impact of changes in the broad industrial composition of unemployment. These data have been computed on a quarterly basis, but only for the years 1947-56 (C. D. Long, The Labor Force Under Changing Income and Employment [Princeton Univ. Press, 1958], pp. 365-6). They give full support to the factory wage data in revealing generally less rapid wage increases on each higher unemployment level higher unemployment level.

graphed). App. A, Table XXII.

account of variations in the inputs of both labor and capital. Unfortunately, Kendrick's data do not cover the recent recession, since they end in 1957 (Table 3).

This comparison, despite its reliance on crude annual data, fully supports our findings that the higher the unemployment the more rapid the productivity advance. When unemployment was over 5 per cent, output per unit of labor input rose over three times as fast as when unemployment was under 4 per cent; and output per unit of both capital and labor inputs rose three and one-half times as fast.

TABLE 3

Comparison of Unemployment Levels and Productivity, Taking Account of Changes in Labor and Capital Inputs, 1947–57

	Annual Percentage Increase			
Unemployment Level	Output per Labor Input	Output per Unit of Capital and Labor Input		
4.0 per cent or less	1.7	1.2		
1947–48. 1951–53.	1.2 2.1	0.5 1.6		
4.0 to 5.0 per cent	2.7	2.2		
1955–57	2.7	2.2		
Over 5.0 per cent	5.5	4.3		
1949–50	5.5	4.3		

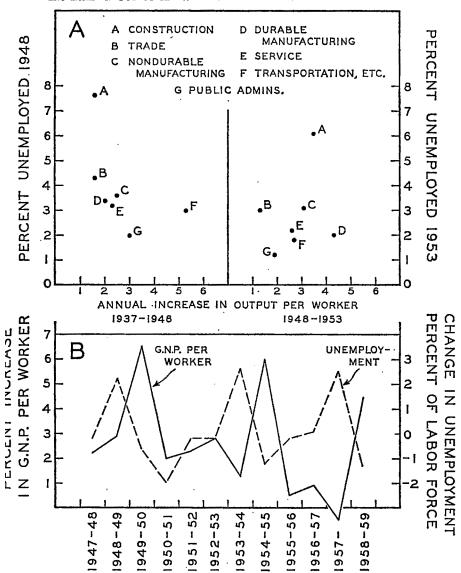
Was Higher Unemployment the Result of Rapid Productivity advance? We have seen that output per worker grew most rapidly during high unemployment. Could unemployment have been the effect rather than the cause of the acceleration of productivity and its consequent reduction in labor requirements per unit of output? We shall not answer this question in any complete way; but one set of comparisons seems to establish a presumption against technological advance as a cause of unemployment and a second seems to favor unemployment as a cause of technological advance.

The first set consists of cross-sectional comparisons of increases in output per worker and unemployment for seven major industry groups. The productivity data are those of John Kendrick and are available only for key years: 1937, 1948, and 1953. We compare for each industry group the average annual change in productivity between 1937 and 1948, and the level of unemployment in 1948 (Chart II, Section A, Left). Similarly we compare the average annual change in an industry's

⁹ Productivity Trends in the United States, op. cit., App. D-K. In some cases the industries may differ in coverage as between productivity and unemployment. Notably, Kendrick has computed productivity data for government only for the Post Office.

CHART II

INCREASES IN OUTPUT PER WORKER* AND THE LEVEL OF UNEMPLOYMENT



*Source: John W. Kendrick, Productivity Trends in the United States (NBER, 1959, mimeo.).

productivity between 1948 and 1953 and the percentage of its workers unemployed in 1953 (Right). The first yields an inverse relation: the greater the average change in productivity between 1937 and 1948, the smaller the unemployment rate in the latter year. The second yields no significant association in any direction. So crude a cross-sectional com-

parison is far from conclusive but, for what it is worth, it does point in opposite direction from the idea that unemployment was the result of productivity advance.

The second analysis, which favors unemployment as a cause, is based on time series. Year-to-year changes in the unemployment are compared with year-to-year percentage changes in Kendrick's GNP per worker.¹⁰ This comparison suggests that the two movements may have been related, but it shows that the three major increases in output per worker those in 1949-50, 1954-55, and 1958-59-followed those of unemployment by a year and that by the time the increase of output per worker reached its peak, the rate of increase of unemployment had taken a sharp decline. More research is needed on this question of which, unemployment or productivity, moves first; no doubt there is interrelation. But the presumption seems to support unemployment as the prime mover.

"Lubrication," "Insecurity," and "Pencil-Sharpening" Effects of Unemployment. It is often maintained that a certain amount of unemployment is necessary, to grease the way for economic growth and to prevent the frictional heat of inflation. Newly born firms and expanding industries may need workers in larger numbers than are being released by those that are currently dying, and the workers released may have obsolete skills and need new training. The unemployed can fill the breach while new workers are adapting and moving to the areas of expansion. Were it not for the unemployed reserves, the expansion might grind more slowly or generate inflationary wage and price increases. This I call the "lubrication effect."

Unemployment could also exert what I call an "insecurity effect." Fear of losing jobs could make labor—union or nonunion—less aggressive in pressing for wage increases and more disposed to put extra effort and care into its work. Difficulty of getting new jobs would reduce labor turnover and thus enhance efficiency through greater continuity of employment and less training expense. The insecurity effect on workers may also lead to, and be associated with, what I call a "pencil-sharpening effect" on employers. Pressure from directors and stockholders of firms losing money and stiffer competition from other firms in similar difficulties might make management more anxious to cut costs and therefore more resistant to wage demands and more willing to increase efficiency and cut prices in order to regain lost business and restore profits.11

¹⁰ Op. cit., App. A, Table XXII.

¹¹ On the other hand it is possible that insecurity could have negative effects on productivity, through monopolistic restrictions, price supports and feather-bedding devices. However, most firms and industries probably do not have the great degree of monopoly required to resist the competitive pressure from rival products and substitutes.

The insecurity effect, the lubrication effect, and the pencil-sharpening effect may all work in the same direction, and it is probably not possible to disentangle them quantitatively. But why should 5 to 6 per cent unemployment be required to stimulate growth and check inflation and why, at levels of 4 to 5 per cent, should wages and prices leap ahead so nimbly while output brings up the rear? What is the nature of prosperity unemployment that it seems to fail either as a lubricant or as an insecurity stimulant?

The balance of this paper will examine the prosperity unemployment, in order to throw light on whether it is due to a deficiency in the power of our economy to generate full employment at stable prices and rapid growth, or to the nature of the unemployed and their possible inability to fill the needs of an expanding economy except under inflation and lagging technology.

V. The Anatomy of Prosperity Unemployment

Understanding unemployment requires an examination of the unemployed themselves: the kind of people they are, where they are located, and the nature of their idleness.

Sex. During recession males and females tended to have roughly the same unemployment rates, and their proportions of unemployment have reflected their proportions of labor force—about two-thirds males and one-third females. During prosperity, however, female unemployment seems to maintain $\frac{1}{2}$ to 1 per cent higher level, undoubtedly because of a much higher labor force turnover in normal times.

Age. Wide differences in unemployment rates prevail between different age groups—mainly between males over and under twenty-five and between females over and under twenty—with the younger persons having much the highest idleness. Indeed, about one-third of the unemployed were under twenty-five, in both prosperity and recession years. Less than a 1 per cent rate separated the various male age groups between twenty-five and sixty-four. Men sixty-five and older tended to have roughly median rates for those groups twenty-five and older, but many doubtless leave the labor force and are thus not identifiable from those who are voluntarily retired. Unemployment of younger persons seems to fall relatively less in prosperity than the unemployment of persons twenty-five and older, again because of more turnover among jobs or between school and labor force.

Duration. The seriousness of unemployment is reflected not only in number but also in length. The average duration during the recent recession was higher than during the earlier two; one in three was idle fifteen weeks and longer, compared to one in four in the recession year 1954 and the high prosperity year 1955. Long-duration unemployment in-

creases with age of both females and males; and in both recession and prosperity years it was more than double for the men sixty-five and older what it was for the teenage workers. The young person is more apt to become unemployed; the older person to stay unemployed.

Color. About one in five unemployed persons has been nonwhite. Unemployment rates of colored have ranged from two-thirds more than those of the whites to double. Fluctuations have been similar, except that the colored rates did not fall as fast in the recoveries from any of the three recessions. Colored unemployment rates manifest an upward trend relative to whites, especially since 1954.

Industry. Unemployment has differed greatly among industries. Rates were highest in construction, mining, and manufacturing, median in trade, and lowest in transportation, public utilities, services, and government. The peacetime prosperity rate of idleness in construction was over five times as great as that in government. The rankings held over most of the years, especially since 1954; that is, the industries with relatively high unemployment in prosperity were also the industries with relatively high unemployment in recession.

Occupation. Unemployment has varied even more widely between major occupations. In 1958, the 15 per cent unemployment of laborers was seven times that of professional and technical employees. The rates were in general highest for the blue-collar or manual occupations and lower for the white-collar and service occupations, with the selfemployed, the employer, and the managerial groups at the bottom. As with the industrial groupings, the rankings were remarkably stable, both among the recession years of 1949-54 and 1958 and between recession and the prosperity. Since 1948 the civilian labor force in whitecollar and service occupations has risen substantially, from under 47 per cent to over 53 per cent; but the proportion of total unemployment in these occupations has, if anything, declined. This is because the rates of unemployment among these manual occupations have risen more since 1954 than those in the white-collar occupations. Since 1954, the proportion of total unemployment borne by the manual occupations has been about two-thirds. The white-collar and service occupations, with over half the labor force and a rising proportion of the labor force, have suffered only one-third of the unemployment.

Geographical Area. Unemployment rates have differed between states and communities, most widely between small towns or specialized cities, whose fortunes depend on a particular industry (say, textiles, steel, lumber, coal, education, or government). The biggest cities have had unemployment rates closer to the national average. Some differences occur between broad regions, but not as great as within these regions. Since 1955, the Northeast rate appears to have been somewhat higher than the national, that of the South somewhat lower, with the West and

North Central near the national average. However, the proportion of national unemployment contributed by the excess unemployment of the so-called "depressed areas" has been relatively minor, though of course serious to the areas concerned.

Is There a Typical Unemployed Person? The answer is partly yes and partly no. Unemployment falls on all classes, but especially on the

CHART III

Source: United States Census, Current Population Reports, Series P-50, Nos. 68, 77, 86, 91.

PERCENT OF UNEMPLOYED

40

60

80.

100

20

young person under twenty-five, the colored worker, the older worker, the manual or blue-collar worker, the worker attached to construction, mining, and manufacturing, and notably the worker with little or no education. In the prosperity month of March, 1957, the half of the civilian labor force with less than four years of high school suffered 70 per cent of the unemployment. College graduates, who were 9 per

cent of the labor force, contributed only 1.6 per cent of the unemployment.12

Of the groups that have the most unemployment at any one time, some are apt also to suffer most from long-duration or repeated spells, particularly older workers, colored workers, laborers, domestic servants, single, widowed, or divorced men or women, and workers in construction or nondurable goods manufacturing. Repeater-unemployment can be measured in the work experiences published once a year by the Census.¹³ With these, we can construct Lorenz curves indicating the percentages of total man-weeks of unemployment suffered each year by various percentages of unemployed. Distributions for each of four years, 1955 through 1958, reveal several interesting phenomena (Chart III).

First, the distribution of unemployment among the unemployed is remarkably uneven. In the prosperity years, about one-fourth of the unemployed suffered nearly two-thirds of the aggregate unemployment, and half of the unemployed suffered 85-88 per cent of the unemployment.

Second, the distribution varied only slightly between the prosperity years 1955, 1956, and 1957.

Third, if anything, the distribution of unemployment was somewhat more uneven during the three prosperity years than during the recession year. In 1958 the most heavily afflicted group of unemployed suffered, not two-thirds, but only 57 per cent of the aggregate man-weeks of unemployment.

VI. Conclusion

If the foregoing analysis is correct, the performance of our economy in providing high employment under rapid growth and stable prices would be best enhanced, not by increasing the aggregate demand for labor through spending, but rather by improving the quality and availability of the prosperity unemployed, in order to qualify them for the kind of jobs the economy can provide in time of peacetime prosperity without inflation.

This is not so simple as increasing aggregate demand through spending. It means fighting unemployment on many levels: by improving the education and training of the young and unskilled; by restoring the usefulness of the middle aged through rehabilitation and replacement of obsolete skills; by removing barriers to the employment of the old, the negro, and even the female worker; by providing more job informa-

¹² Bureau of the Census, Current Population Reports, "Educational Attainment of Work-

ers, March 1957," Series P-50, No. 78, p. 8.

¹³ Bureau of the Census, Current Population Reports, "Work Experience of the Population," Series P-50, Nos. 68, 77, 86, 91.

tion to workers of all ages and extending more encouragement to move to new occupations, industries, and areas; by eliminating the temptation of some workers to malinger in order to collect unemployment insurance; by modifying the unsettling effects of bad weather and irregular buying and selling habits in creating seasonal variations in employment; by moving new capital and enterprise to depressed areas; by improving the efficiency of small and marginal firms, in order to reduce the high rate of business deaths that occur even during normal times; and by curbing the monopoly power of giant firms and unions—a power which enables them to seize on improvements in business as an opportunity less to expand production and employment than to raise wages and prices.

Some final words of caution in drawing inferences from the results of this paper:

The fact that economic growth seems to have been more rapid and inflation less rapid at higher unemployment levels does not prove in itself that higher permanent levels of unemployment would be accompanied by more rapid secular rates of economic progress and greater long-run wage-price stability (though these possibilities must not be excluded). The episodes of unemployment over 5 or 6 per cent have been brief and may have merely ripened the technological harvest rather than planted or cultivated it. Our results must also be tested against the data of other times and other nations, as well as of those of detailed industries and localities.

In any case, if it should be true that rapid growth and stable prices are not presently compatible with a really low level of unemployment, this is an argument, not for inflation, not for a slower rate of growth, not for unemployment as a positive benefit or a necessary evil, but for an attack on the principal causes—those which lie in the deficiencies in the supply of labor among the prosperity unemployed.

REDUCING UNEMPLOYMENT IN DEPRESSED AREAS

By Isador Lubin Rutgers University

Five months ago the Bureau of Employment Security of the United States Department of Labor issued a report entitled, "Chronic Labor Surplus Areas: Experience and Outlook." I should like to quote from its "Summary and Highlights":

Forty-six major labor market areas and 143 smaller centers were officially classified by the Bureau of Employment Security as "areas of substantial labor surplus" in July 1959. In 17 of the 43 major areas, located in continental United States, and in 53 of the 143 smaller centers, unemployment has been 50 percent or more above the national average for at least four of the past five years. On the average, approximately one in every nine workers in these chronic labor surplus areas (10.9 percent of the local labor force) was unemployed in May. This was more than double the unemployment rate for the Nation as a whole.

It is interesting to note that the seventeen major mainland areas with persistent unemployment were concentrated in eight states. Five areas were in Pennsylvania and four were in Massachusetts. Of the remainder, two were in Indiana and in Michigan. The other major centers were Atlantic City, New Jersey, Asheville, North Carolina, Providence, Rhode Island, and Charleston, West Virginia. It should be pointed out, however, that there was at least one area, whether major or small, with chronic unemployment in each of twenty-two states.

There are two significant facts relating to these areas that are worthy of emphasis. The first is that as a group, they fared worse than the nation as a whole during the recent recession. The second is that they have not experienced the same degree of improvement as the country as a whole did during the recovery period. Whereas the national decline in nonfarm employment averaged 4.2 per cent in the twelve months of the recent recession—May, 1957, to May, 1958—the drop in the seventeen major chronic areas was about two and one-half times that figure; namely, 10.1 per cent. During the recovery of the following twelve months, the rise in employment for the nation as a whole made up for about 93 per cent of the previous year's losses. In these surplus labor areas, however, less than one-third of the previous year's employment losses had been offset.

Although there were considerable variations between individual chronic surplus areas, the combined drop in employment for the group as a whole constituted 14 per cent of the total national employment decline, although the group accounted for only 5 per cent of the country's nonagricultural wage and salaried jobs. In short, unemploy-

ment in these chronic areas was proportionately greater in amount and more prolonged than in other parts of the country.

The effects of this abnormal situation were reflected in the exhaustions of unemployment insurance benefits in these areas. During the year ending May, 1959, such exhaustions were equal to approximately one-tenth of the total for the country, in contrast to their having furnished only about one-twentieth of the country's employment. It should be added, however, that the size of these figures was heavily affected by the large number of benefit exhaustions in the Detroit area.

That the rapid economic improvement that has taken place during the past six months has not been widely reflected in the chronic areas is revealed by a Labor Department release of December 3, which shows that thirty-two of the major areas were still classified as having major surpluses of labor.

There are certain characteristics of these major chronic surplus areas that should be noted. First, they have had a much greater concentration of nonfarm employment in manufacturing than the nation as a whole. In the three important areas where such manufacturing concentrations was not abnormally high, employment was dependent on a single nonmanufacturing industry. In the Atlantic City area it was resort activity, in Altoona, Pennsylvania, it was railroads, and in Charleston, West Virginia, it was coal.

A second distinctive attribute of these major chronic surplus areas is the fact that their economies have tended to be dependent on one or two industries. Indeed, twelve of the seventeen might be listed as "oneindustry towns."

A third feature is the declining employment levels that have occurred in these areas during the past decade. In eleven of the seventeen major areas fewer people had jobs in May of 1959 than in May of 1950. Although there had been some employment increase in the remaining six, the rate of rise had not equaled that of the rest of the country.

Fourth, there was a rather high concentration of skilled and semiskilled workers among the unemployed in these areas.

A look at the economy of the larger of these areas reveals that three types of industries have tended to predominate. All were in the durable goods groups; namely, transportation equipment, primary metals (mainly steel works and rolling mills), and machinery (both electrical and nonelectrical). An analysis of employment in these industries reveals a fifth fact that should be emphasized: There was a tendency for these industries to lay off proportionately more people in the chronic surplus areas than in other areas during the 1957-58 recession. In many instances, also, their rate of re-employment did not rise as fast as in other areas.

In the automobile industry, for example, employment has been declining during the past decade. In the peak production year, 1955, when 6.1 million passenger cars were turned out, employment averaged 904,000. Two years later, in 1957, when approximately the same number of cars were made, employment had fallen to 786,000, a decline of almost 13 per cent. In some measure this change in employment levels is a reflection of improved productivity, part of which has been the result of the increased use of automated production equipment. As has been pointed out by William Haber, there have also been other forces at work which account for some of this drop in employment. Among them he places great weight on the major shift in our defense procurement from tanks and ordinance to missiles.

This decline in automobile employment has been particularly marked in Detroit. In 1950, automobile employment in that city accounted for 40 per cent of the total for the country. By 1955, when production had reached its all-time peak, Detroit accounted for only 35 per cent of the country's total automobile employment and by last May, it had fallen to 28 per cent. Here, also, a rise in productive efficiency has played a part, but in the main, the decline is to be attributed to the continuing decentralization of automobile production, the consolidation of several of the smaller producers, and the shutdown of some plants that had been producing makes of cars that have been discontinued in recent years. It is estimated that there are now something like 130,000 fewer jobs in the automobile industry in Detroit than there were ten years ago. This number is equal to about a third of the automobile jobs in existence in Detroit at the beginning of the present decade.

A lag in employment recovery appears also to have occurred in the steel plants located in the chronic labor surplus areas. Last summer, immediately prior to the start of the steel strike, steel output reached all-time records. Of the 142,000 workers that had been laid off in the preceding year, some 95 per cent had been reabsorbed by May. This was not true, however, in five of the six chronic unemployment areas where the re-employment of steel workers did not keep pace with the average for the country. To be sure, the margin of difference in several of these areas was relatively moderate, but the lag was very evident.

One finds similar pattern tendencies in chronic surplus areas where there is a concentration of machinery manufacturing. In seven chronic areas where this type of industry is an important employer, only five had attained a percentage of recovery equal to the national average.

The textile areas are, of course, the classic illustration of radical employment shifts during periods of recession and revival. Employment in this industry has been tending downward for several generations. During the present decade it has fallen by almost 23 per cent. During the

recent recession total textile employment held up fairly well, the average decline for the industry as a whole being about 8 per cent. But the percentage decline in chronic labor surplus areas, like Lowell, Massachusetts, Providence, Rhode Island, Paterson, New Jersey, and the Utica-Rome area in New York, was about double that of the average for the rest of the country. Nor have these areas shown more than a minor recovery during the past eighteen months.

In coal mining, both bituminous and anthracite, output and employment slumped markedly during the recent recession. In the face of recent rising bituminous production, although not to the levels of early 1957, there has been little or no increase in employment. Indeed, some of the chronic surplus labor areas have been showing employment declines during the past year.

It has been pointed out by William Miernyk that most of the chronic surplus areas were relatively prosperous in the not-distant past. If something is to be done to make use of their labor resources it is essential that we know why these areas became "depressed" as well as why the depressed conditions have continued to persist.

Although chronic depression is rarely the result of any one cause, there usually is some single factor in the community which is outstanding in its effects on the employment situation. These factors have been discussed in the literature on this subject as well as in a whole series of Congressional investigations. For our purposes the listing used by Miernyk in his report on "Depressed Areas" should suffice. The main factors are technological change, the migration of industry, shifts in demand, depletion of resources, and protracted seasonal unemployment.

As to technological change, a classic case in point is Altoona, Pennsylvania, which at one time was one of the largest steam locomotive repair centers in the United States. With the advent of the diesel engine, the skills of the old-line roundhouse mechanic were no longer required. Nor was there any longer a need for large central repair centers. Altoona has been classified as a substantial surplus labor area continuously for more than eight years—since July, 1951. Its unemployment rate during most of this period has run at about twice the national average.

The movement of textile plants from the northeastern part of the country to the South is the outstanding example of migrating industry as a cause of chronic labor surplus. With the exception of a lull during the World War II period, this migration has been going on for almost thirty years. One could cite community after community in Massachusetts, New Hampshire, Pennsylvania, Rhode Island, New Jersey, New York, and more recently in Maine where, within a period of a few months, literally thousands of workers have been laid off with no other

job opportunities available in nearby areas. In March, 1959, textile employment in Lawrence, Massachusetts, was 3,700 as compared with 31,800 in 1942.

To be sure, the migration of industry is not a new phenomenon in the United States. There appears, however, to have been an acceleration of such migration during recent decades. As Miernyk has indicated, the areas that have become depressed as a result of such plant movements have usually been the ones that have found it hardest to readjust their economies.

The shift from coal to oil as a source of domestic heat and industrial power has caused havoc in parts of Pennsylvania and Illinois. In Johnstown, Pennsylvania, employment in the coal industry has fallen by 58 per cent since 1950. In Scranton, local unemployment rates have varied during the past decade from about twice to four times the national average. In the Wilkes-Barre-Hazelton area, employment in the anthracite mines has fallen by 80 per cent during the past nine years and the percentage of unemployment has been running at two to three times that for the rest of the country.

Hand in hand with the shift in the demand for coal has gone the depletion of high-grade and low-cost coal seams, thus accentuating the problems of some of the coal areas. Exhaustion of resources has also created chronic surplus labor conditions in certain areas where employment has been dependent on the mining of iron ore, zinc, and lead.

In scattered resort areas seasonal concentration of employment leads to substantial labor surpluses for the greater part of the year. Atlantic City is a case in point.

To the unsophisticated the solution of the problems of the surplus labor areas appears to be simple. Why not make the unemployed move to other areas where jobs exist? Despite the high mobility of American labor (Stanley Labergott has estimated that there were 170 million job changes in 1955 when our labor force averaged 69 million), the obstacles facing an unemployed worker with a family in moving to another community are of no mean measure. First, assuming that a worker knows of job opportunities in another community, it is as likely as not that he owns his own home, which can usually be sold only at a considerable financial sacrifice. Second, there is the cost involved in moving a family. Third, there are the ties of the worker and his family to friends, schools, churches, and other social groups. Moving means tearing up roots that have often developed over decades and, in many instances, over generations. Fourth, the skills which the worker has developed over the years may not be readily transferred to other types of work. Finally, if the worker is over forty-five, the prospects of finding a job in a new community will in all probability be rather slim. All available data indicate that the older a worker is at the time he becomes unemployed, the more likely is he to suffer an extended period of unemployment. Studies in New York show conclusively that persons over forty-five have been considerably less successful than others in finding new employment. New York State Department of Labor studies of communities from which plants have moved reveal that offers of employment in the area to which factories migrate, even when supplemented by footing the moving bill as well as by cash bonuses, have not usually proven sufficiently attractive to overcome the emotional and economic wrenches involved in a settled worker's leaving for a new community.

Recognizing the need for specific action, additional to general antidepression efforts, to aid localities with chronic serious unemployment, the federal government undertook a program of assistance to such areas in 1949. It consisted primarily of expediting public works or other federal construction contracts in such areas and of giving them preference in the award of other types of government contracts on condition that the prices bid were on a level with those received from other areas. During the Korean war, as the result of the unemployment caused in certain areas by restrictions on the use of certain materials for civilian purposes, government procurement agencies were authorized to give preference in the placing of contracts to firms in labor surplus areas, again conditional upon such preference not increasing the cost of such procurement to the government.

In 1953, in order to encourage industries to establish new plants in the depressed areas, certain special tax amortization advantages were given to firms building or expanding certain types of defense facilities in labor surplus communities. Preferential treatment has also been given to labor surplus areas, under the "Buy American Act." Other aid has been granted them through the Community Employment Program of the Bureau of Employment Security of the U.S. Department of Labor and through the Office of Area Development of the Department of Commerce.

In 1956, President Eisenhower recommended that there be a new area assistance program to supplement existing federal and local development activities. Recommendations to assist the chronic surplus areas have been included in his legislative program in each of the past three years. Various area redevelopment bills have been introduced in the Congress in recent years. But when the Douglass-Payne Bill was passed in 1958, it was pocket-vetoed by President Eisenhower.

There is little doubt that without federal help the problems of the chronic surplus labor areas will continue to fester and be a drag upon the rest of the economy. The fact that statistically some of these areas have been showing some improvement in employment levels is not

necessarily evidence of any significant economic improvement in these particular localities. There is no doubt but that the establishment of ladies' dress factories in some of the depressed areas of Pennsylvania has created employment opportunities for the wives and daughters of unemployed miners, but it is questionable whether this is a satisfactory or more than a temporary solution to the problem of unemployment in these areas. It is significant that in Altoona, Pennsylvania, almost 70 per cent of the unemployed are men. In the Johnstown and Wilkes-Barre areas the figure is 75 per cent and in Terre Haute, Indiana, it is 80 per cent.

One can cite various communities where devoted private and governmental groups have undertaken to rebuild their economies so as to eliminate the abnormally high local unemployment. Virtually none, however, has attained any great measure of success. To be sure, the statistics show that certain former textile centers have made considerable progress in lowering the extent of unemployment, but I think that an analysis of the figures will reveal that for the most part these communities are adjacent to other areas where economic expansion has been taking place. I believe this is particularly true of the satellites of the Boston industrial area where recent new developments in the electronics and allied industries have furnished jobs to those who have become commuters from the localities in which they live and formerly worked. It is not rare for workers residing in chronic depressed towns to drive as many as fifty miles to their jobs—a total round trip of a hundred miles each day.

If a federal program to aid the chronically depressed areas is to succeed, it should be based upon local undertakings. Its primary purpose should be to stimulate local groups—private and governmental—to make the necessary efforts to develop a workable program. It should supplement the activities of such local groups with specific aid. In this way there will be a greater certainty that policies adopted will fit local needs.

Such federal aid should take many forms. Primary among them should be studies of the physical and human resources of the areas. These will involve labor inventory studies of who the unemployed are, their skills and their potentialities, as well as market, transportation, site, water, and community resource surveys. Once these have been defined, they should be related to the types of economic activity that lend themselves to the use of such resources.

This in effect will mean both exploring and encouraging new business possibilities. And where the realization of such possibilities may require the retraining of the existing labor supply, facilities for such retraining should be furnished by the state employment services. In instances

where private facilities are required for such training, scholarships and loans should be made available to the retrainee.

It is obvious that one of the most important aspects of any program for the economic rehabilitation of a depressed area will be financing. Here, however, the difficulty is that it is usually in just such areas where private capital is most short. There have been various instances where the inability to secure the necessary financial aid has made it impossible to carry out well-formulated and practical plans for creating new job opportunities. Accordingly, it appears essential that there be some sort of federal revolving fund available to those areas which cannot finance their own development projects from private or state funds. Such financial assistance, in my opinion, should be primarily in the form of direct loans or partial government guarantees of loans advanced by private institutions. In certain special cases, where constitutional or other obstacles stand in the way of a division of government accepting a loan, provision should be made for limited grants. Such funds should be available only to assist in the purchase of land and facilities for industrial use, or for the construction, rehabilitation or alteration of existing industrial plants, and for training workers in new skills. In every instance, however, such financial assistance should be predicated on a specified contribution to the project by the local or state government. It stands to reason, of course, that no loans should be made to enable an establishment to relocate from another area if, in the process, unemployment would be increased in the area of original location.

I would propose also the continuation of rapid amortization privileges for plants to be located in areas where conditions are particularly serious.

Most of these requirements for federal assistance have, in essence, been incorporated into the various bills that have been debated in the Congress. Such disagreement as has existed has centered around how big or how small should be the participation of the local governments and around what interest rates should be charged on loans made by the federal government. The holding up of economic redevelopment of depressed areas because of an almost religious insistence that there is something immoral in the federal government's contributing more than a certain percentage of the cost of a project, to the detriment of communities that have hardly anything to contribute anyway and at the expense of the families of the unemployed in these areas, just does not make any sense to me. In all honesty, who really knows what the proper percentage should be?

There has also been a problem of defining what areas should be eligible for assistance and there has been well-justified insistence that federal aid for projects of the sort here contemplated should not be

available to areas where high unemployment rates are attributable to temporary conditions. The latest version of Senate Bill 722 eliminates areas where unemployment is due primarily to temporary or seasonal factors. It defines an industrial redevelopment area as one whose average rate of unemployment has been at least 50 per cent above the national average for three of the four preceding calendar years; or 75 per cent above that average for two of the three preceding calendar years; or 100 per cent above the national average for one of the preceding two years.

I have made little mention of the human costs of the unemployment, the low incomes, and the disintegration of family and community life that are concomitants of distressed areas. The lack of any justification for such conditions in a nation with a national income as large as ours and a general standard of living as high as ours should be obvious. By helping to improve the economic status of the depressed areas we shall not only be helping hundreds of thousands of American families to get a greater share of the national product but we shall also be helping to cut down on public outlays for unemployment compensation and public assistance. And of equally great importance, we shall be creating conditions which will help the people in the distressed areas to make a greater contribution to the nation's output, thus enhancing our country's economic and social growth.

DISCUSSION

Jacob J. Kaufman: In attempting to reduce unemployment in depressed areas there are in general two broad approaches. One approach is to facilitate the movement of people located in depressed areas to jobs in areas of economic growth. The second approach is to bring jobs to people; that is, to attempt to stimulate economic growth in the depressed areas themselves. It is possible that both approaches might be employed, to a greater or lesser extent, depending on the particular area concerned. In this paper it is intended to discuss each of these approaches separately, indicating briefly some of the problems which might be encountered. Finally, it is my intention to discuss the question of the type and extent of governmental intervention which might be required if we are to reduce sharply unemployment in areas of chronic unemployment.

People to Jobs. In the long run we might discover not only that we are all dead but that the problem of unemployment, particularly the chronic type, will be solved. It might well be that the market forces, which have a nasty habit of disregarding social costs, will eventually eliminate the problem. The question, however, can be raised as to the extent to which we can depend upon the mobility of labor to reduce eventually the high levels of chronic unemployment which persist in certain areas of this country?

There is the general consensus that the American people are highly mobile. We have observed, over the years, mass movements of people from one area of the country to another. And the World War II experience was no exception. Charles Myers indicated that, while geographic mobility was lower than either industrial or occupational mobility, it was still important. However, despite what looks to be a highly mobile labor force, certain evidence suggests that such migration might well hide many pockets of highly immobile workers. For example, in a study of the problem of chronic unemployment in certain areas in the commonwealth of Pennsylvania it was found that the characteristics of a labor force which tends to make it immobile are the very characteristics which prevail in these areas of chronic unemployment. This confirms the findings of Howard J. Bogue. Some of the factors which influence mobility are: age, home ownership, job opportunity, marital status, occupation, ethnic origin, sex, war, level of education, unionism. Without going into any analysis of each of these factors which affect geographic mobility, let me state that when one examines them in terms of their applicability to areas of chronic unemployment in Pennsylvania it is found that these factors tend to reduce the actual or potential mobility of workers who are located in these areas.

Therefore, if one were to approach the problem of chronic unemployment from the point of view of inducing persons to move to areas of growth and opportunity, it would be essential to meet head on these factors that contribute to immobility. If we examine each of these factors in these terms, it is apparent that we face a very difficult task. If ethnic origin tends to reduce the propensity to move, how do we go about changing this? If the level of education

is a retarding factor in mobility, what shall we do to raise the educational level of the chronic unemployed? And if they are in the higher age brackets, will education do the trick? If welfare programs of unions and of the state and local governments reduce mobility, does this mean that we shall have to starve these workers into mobility?

Does this mean, therefore, that we must abandon this approach to the problem of reducing unemployment in depressed areas? I do not think so. It seems to me that there are some things that can be done from the point of view of facilitating the movement of people to jobs. Let me suggest a few. Training facilities can be established in order to increase the employability of some of these workers who might find opportunities elsewhere. It seems to me that welfare programs might well be conditioned so that persons are required to attend training classes if they are to receive their benefits. The young people in these areas might be given some special attention while in school, particularly in the form of guidance and training, so that they do not fall into the pool of the chronic unemployed because of ignorance.

Jobs to People. The second approach, as indicated earlier, is that which is designed to develop industrially those areas which have had persistent unemployment. This might well be called the industrial development approach, which is strongly supported by Lubin.

This approach requires that firms be induced to locate in areas of chronic unemployment and thus sop up these pockets of unemployment. And this is no easy task. For one thing, industrial development has today become highly competitive. Thousands of communities are outdoing each other trying to induce firms to locate in their respective areas. To be successful in this endeavor, it is essential that communities: first, develop some long-range plans which are designed to improve the physical and community facilities in the area; second, obtain funds with which to assist firms in their financial problems; and, third, develop local training facilities so that a trained labor force which meets the requirements of the new firms is available.

In Pennsylvania, where there are many communities which have suffered from chronic unemployment, some effort has been made along these lines. Many communities have raised local funds to assist in the financing of new firms. They have an opportunity to obtain additional assistance from the Pennsylvania Industrial Development Authority which can contribute up to 30 per cent of the cost of land and buildings. And private financial institutions are participating in this financing as well. When these industrial development efforts, industrial promotion programs, and community planning efforts are all added together—along with the efforts of private utilities—we still find that high levels of unemployment persist throughout the state, and this is a state which has probably done more along the lines of industrial development than any other state.

The fundamental problem is that these depressed communities lack, in many cases, the economic and human resources which are so essential to industrial development. In addition, they are not necessarily well located in an economy in which business has become more market-oriented rather than resource-oriented.

The Role of Government. It would seem that the two approaches discussed above seem to be able to ameliorate but not to solve the problem of chronic unemployment. What then must be done?

Beveridge, in his book on *Full Employment in a Free Society*, stated that there were essentially three conditions necessary for full employment. They are: adequate total outlay, controlled location of industry, and the organized mobility of labor.

In a paper presented on December 28, 1959, before the Industrial Relations Research Association, Professor William H. Miernyk referred to the "erosion in the concept of 'full employment'" which has taken place in this country. Full employment is being sacrificed at the altar of price stability. This reflects the general view that the total outlay necessary to reduce substantially the level of unemployment which persists not only nationally but also in specific areas in the country would result in significant rises in the price level. In my opinion, given the inflexibilities and rigidities in our economic system, these pockets of unemployment cannot be absorbed at current levels of outlay or even at much higher levels of total outlay.

Then what can be done? Beveridge states that we must then develop means to control the location of industry of a type which exists in Great Britain and to organize the mobility of labor. Regardless of the merits or demerits of these two techniques, the fact is that the state of the economic mind of this country today would not accept these methods for eating into the problem of chronic unemployment. The best that could be done along the lines of location of industry and the mobility of workers has been described earlier, aside from the operation of the market forces. But this will not be enough, even if Congress enacts an area redevelopment bill, because this bill accepts the voluntaristic approach.

There must be a recognition of the fact that monetary and fiscal policy is concerned solely with levels of unemployment and can accomplish little in alleviating structural unemployment in our economy. Assuming this to be true, it is essential that various programs be developed to attack the problem of unemployment of particular groups—young persons, nonwhites, women—and particular areas. Absent strong governmental intervention, these programs will ease but not solve the problem of chronic unemployment.

RUTH P. MACK: We have been asked to consider the problem of achieving and maintaining full employment. This is only partly a question in economics. It is a question as well in practical politics.

Put in another way, achieving and maintaining full employment involve deciding not only what should be done but a more difficult question—what can be done. Of necessity, then, it is essential to heft matters not strictly economic in choosing among cultural values served by alternative programs. It is essential to search for the earthy realities—the textures and smells—of the real world in which economic action takes place. Even where largely economic problems are at issue, they tend to be difficult to analyze since often cause and effect must be disentangled.

Let me illustrate each of these propositions using both the many successes

and what I take to be a few failures of the papers we have heard.

I can only mention the matter of cultural values. Mr. Long's and Mr. Lubin's papers are shot through with selections of this sort. They are, for one thing, implicit in any definition of full employment. Also, both authors point to sectors of the labor force which are unemployment prone and insist on the central importance of efforts to reduce unemployment in those sectors. Mr. Long defines the sectors largely in terms of personal characteristics of people. Mr. Lubin defines them in terms of characteristics of certain types of industrial situations and shows that they often concentrate in localities; as a result, high unemployment becomes an acute problem for a city or county.

The cure that is suggested implies a choice of values. It also implies a judgment about practical politics. For example, Mr. Lubin brands as naïve the suggestion that people should be induced and aided to move from areas where unemployment is high. He believes instead that therapy should focus on bringing employment opportunities to the area through substantial federal subsidy and local administration of renewal and rehabilitation programs.

Certainly it is better that people are not driven from their homes in search of work. But on the other hand, if efforts to bring work to them prove only halfway effective and far more expensive than the most generous resettlement aid, the choice of ideal values may need reconsideration in the harsh light of a realistic hefting of the hazards of competitive bidding among localities for new business, of locally administered spending of federal funds, or of the processes of selection at work in declining populations.

I turn next to another sort of selection: the selection of the parts of a specific program. Addressing himself to the "institutions and mores of our enterprise economy," addressing himself also to the economic fact of observed performance, Mr. Nourse urges a course of action aimed at what he calls "institutionalized inflation." His program turns away from government regulation or monitoring of wage rates or other prices and advocates a dictum of the Employment Act; namely, "to foster and promote free competitive enterprise." The program has four prongs: (1) Integration of antitrust statutes into a basic policy law applicable to all fields of business. (2) Vigorous and consistent enforcement of the law by the judiciary and other regulatory and administrative bodies. (3) The development by economists of enlarged understanding of the theory of large-scale competition for the guidance of the enforcement agencies. (4) Education of the functionaries and the general public in the requirements of a free competitive economic system.

I do not disagree with any of these ideas. On the contrary, they seem to me to be highly valuable. The positive aspects of the program are strongly appealing. Moreover, a negative aspect is arresting. No one can fail to take very seriously apprehension voiced by so experienced a public servant concerning any further expansion of government regulation.

But the ills to which one will fly depends on those we suffer and the alternative havens. I have some worries about the alternatives. I do not altogether agree with what I take to be Edwin Nourse's formulation of what might be called the opportunity costs of his and other programs. Let me try to pinpoint our differences.

I question the extent to which antitrust procedures at best are capable of preventing practices responsible for the recent rising trend in prices. Perhaps some of the cost-push of wage rates could be reduced. Perhaps price rises resulting in "excessive" profits might be lessened. But even if the "perhaps's" could be confidently removed, there is a wide area of potential rise in prices that would be quite untouched.

For one thing, profits and prices can rise in a way which is properly considered inflationary without appearing excessive or indeed being excessive in terms actionable under antitrust procedures, directly or indirectly. To make matters much worse, some recent explorations that I have made suggest that changes in the cost structure may, to a material extent, have been a substitute for a rise in profits and consequently not merely profits but the cost structure as a whole would have to come under the purview of antitrust procedures. One of the manifestations is a rise of over 55 per cent in nonproduction workers in manufacturing, 1947 to 1957, while production workers rose 2 per cent. Cost increases related to an increase in the number of workers is largely independent of corporate-union negotiation. Moreover, there need be no collusion whatsoever for advertising costs, administrative costs, or research costs to rise in ways which are in an appropriate sense inefficient and therefore inflationary. (See my article, "Inflation and Quasi-Elective Changes in Manufacturers' Costs," Review of Economics and Statistics, September, 1959.) The influences on prices of which I speak are a function of product differentiation and other characteristics of modern production and markets. They seem to lie way below the surface of anything accessible to antitrust procedures, however broadly interpreted. Competitive practices themselves could spread this sort of behavior once it takes hold in a few companies in an industry.

My second point of difference is with point 4, or rather with only one aspect of the need for public education which Mr. Nourse so properly stresses. He places a great deal of faith in self-restraint and cohesive social spirit of men in positions of great power. No one would doubt that some people are motivated by generous social considerations most of the time and many people some of the time, and the question is how many and how much. My judgment on this score is "not many and not much" when the social good is opposed to the personal, in-group, or corporate good. Were it otherwise, a man would default on his unspoken oath of office. The best that we can hope for is to widen the time span in which corporate or union officials view their own good. Even so, I am not sure that such development of enlightened corporate self-interest would bring the corporate interest as close to the public interest in regard to trends toward full employment and stable prices as it does in regard to subduing cyclical fluctuation. But this is a longish story which I shall not go into.

A second hope of drawing the interests of the corporation and society or the union leader and society together is via public relations. A favorable press is almost as important to the great producers of consumers' goods as it appears to be to a city government. It is important to all corporations in connection with labor relations. For these reasons it should be useful to consider how the need to propitiate the press can be made to put socially useful constraints on the behavior of corporate or union officials. Lacks are evident. How, for example, can public opinion be brought to bear on pricing practices by labor unions or corporations when there is no public resolution of whether a labor agreement will cost thirty cents or twenty-two cents per man-hour?

I have mentioned a few differences in judgments about cost-price relations and about the way officials respond to various appeals. I do so with some diffidence. Yet I find it impressive and in a sense troublesome that even these subtle evaluations of earthy realities of behavior and complex economic fact imply differences in program. The emphasis on publicity urges the value of an unmistakable statement of urgent public intent to prevent a secular rise in prices. The logical place is in the Employment Act. The thought that so much more than monopolistic practices are involved in rigidity and the upward slide of prices argues (and it may not be a conclusive argument) for the usefulness of governmental review of prices in a few critical industries. Such review would help to moderate rise in the particular set of prices. But Eperhaps more important, it ought to set patterns for proper disclosure of fact and proper standards for business behavior.

I interpret these notions as rather additions to Mr. Nourse's ideas than a contradiction of them. I am "out-Noursing" Nourse in suggesting some further use of specific therapy to handle specific aspects of the many facets of the inflation problem—facets which are not adequately served by the more efficient instruments of fiscal or monetary policy.

PROBLEM OF ACHIEVING AND MAINTAINING A STABLE PRICE LEVEL

ANALYTICAL ASPECTS OF ANTI-INFLATION POLICY

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Just as generals are said to be always fighting the wrong war, economists have been accused of fighting the wrong inflation. Thus, at the time of the 1946-48 rise in American prices, much attention was focused on the successive rounds of wage increases resulting from collective bargaining. Yet probably most economists are now agreed that this first postwar rise in prices was primarily attributable to the pull of demand that resulted from wartime accumulations of liquid assets and deferred needs.

This emphasis on demand-pull was somewhat reinforced by the Korean war run-up of prices after mid-1950. But just by the time that cost-push was becoming discredited as a theory of inflation, we ran into the rather puzzling phenomenon of the 1955-58 upward creep of prices, which seemed to take place in the last part of the period despite growing overcapacity, slack labor markets, slow real growth, and no apparent great buoyancy in over-all demand.

It is no wonder then that economists have been debating the possible causations involved in inflation: demand-pull versus cost-push; wage-push versus more general Lerner "seller's inflation"; and the new Charles Schultze theory of "demand-shift" inflation. We propose to give a brief survey of the issues. Rather than pronounce on the terribly difficult question as to exactly which is the best model to use in explaining the recent past and predicting the likely future, we shall try to emphasize the types of evidence which can help decide between the conflicting theories. And we shall be concerned with some policy implications that arise from the different analytical hypotheses.

History of the Debate: The Quantity Theory and Demand-Pull. The preclassical economists grew up in an environment of secularly rising prices. And even prior to Adam Smith there had grown up the belief in at least a simplified quantity theory. But it was in the neoclassical thought of Walras, Marshall, Fisher, and others that this special version of demand determination of the absolute level of money prices and costs reached its most developed form.

We can oversimplify the doctrine as follows. The real outputs, inputs, and relative prices of goods and factors can be thought of as determined by a set of competitive equations which are independent of the absolute level of prices. As in a barter system, the absolute level of all prices is indeterminate and inessential because of the "relative homogeneity" properties of these market relations. To fix the absolute scale factor, we can if we like bring in a neutral money. Such money, unlike coffee or soap, being valued only for what it will buy and not for its intrinsic utility, will be exactly doubled in demand if there is an exact doubling of all prices. Because of this important "scale homogeneity," fixing the total of such money will, when applied to our already determined real system of outputs, factors, and relative prices, fix the absolute level of all prices; and changes in the total of such money must necessarily correspond to new equilibria of absolute prices that have moved in exact proportion, with relative prices and all real magnitudes being quite unaffected.1

As Patinkin and others have shown, the above doctrines are rather oversimplified, for they do not fully analyze the intricacies involved in the demand for money; instead they ignore important (and predictable) changes in such proportionality coefficients as velocity of circulation. But by World War I, this particular, narrow version of demand-pull inflation had more or less triumphed. The wartime rise in prices was usually analyzed in terms of rises in the over-all money supply. And the postwar German inflation was understood by non-German economists in similar terms.

But not all economists ever agree on anything. Just as Tooke had eclectically explained the Napoleonic rise in prices partially in terms of the war-induced increase in tax, shipping, and other costs, so did Harold G. Moulton and others choose to attribute the World War I price rises to prior rises in cost of production. And it is not without significance that the great neoclassical Wicksell expressed in the last years of his life some misgivings over the usual version of wartime price movements, placing great emphasis on movements in money's velocity induced by wartime shortages of goods.

Of course, the neoclassical writers would not have denied the necessary equality of competitive costs and prices. But they would have regarded it as superficial to take the level of money costs as a predetermined variable. Instead, they would argue, prices and factor costs are

¹But as Hume had early recognized, the periods of rising prices seemed to give rise to at least transient stimulus to the economy as active profit seekers gained an advantage at the expense of the more inert fixed-income, creditor, and wage sectors. The other side of this Hume thesis is perhaps exemplified by the fact that the post-Civil War decades of deflation were also periods of strong social unrest and of relatively weak booms and long periods of heavier-than-average depressions—as earlier National Bureau studies have suggested.

simultaneously determinable in interdependent competitive markets; and if the level of over-all money supply were kept sufficiently in check, then the price level could be stabilized, with any increases in real costs or any decreases in output being offset by enough backward pressure on factor prices so as to leave final money costs and prices on the average unchanged.

Many writers have gone erroneously beyond the above argument to untenable conclusions such as the following: A rise in defense expenditure matched by, say, excise taxes cannot raise the price level if the quantity of money is held constant; instead it must result in enough decrease in wage and other factor costs to offset exactly the rise in tax costs. Actually, however, such a fiscal policy change could be interpreted as a reduction in the combined public and private thriftiness; with M constant, it would tend to swell the volume of total spending, putting upward pressure on interest rates and inducing a rise in money velocity, and presumably resulting in a higher equilibrium level of prices. To roll back prices to their previous level would take, even within the framework of a strictly competitive neoclassical model, a determined reduction in previous money supply. (This illustrates the danger of going from the innocent hypothesis, that a balanced change in all prices might in the long run be consistent with no substantive changes in real relations, to an overly simple interpretation of a complicated change that is actually taking place in historical reality.)

While the above example of a tax-induced price rise that takes place within a strict neoclassical model might be termed a case of cost-push rather than demand-pull, it does not really represent quite the same phenomena that we shall meet in our later discussion of cost-push. This can perhaps be most easily seen from the remark that, if one insisted on holding prices steady, conventional demand reduction methods would work very well, within the neoclassical model, to offset such cost-push.

Demand-Pull à la Keynes. Aside from the neoclassical quantity theory, there is a second version of demand-pull associated with the theories of Keynes. Before and during the Great Depression, economists had become impressd with the institutional frictions and rigidities that made for downward inflexibilities in wages and prices and which made any such deflationary movements socially painful. Keynes's General Theory can, if we are willing to oversimplify, be thought of as a systematic model which uses downward inflexibility of wages and prices to convert any reduction in money spending into a real reduction in output and employment rather than a balanced reduction in all prices and factor costs. (This is overly simple for at least the following reasons: in the pessimistic, depression version of some Keynesians, a hyperdeflation of wages and prices would not have had substantive effects in re-

storing employment and output, because of infinite elasticity of liquidity preference and/or zero elasticity of investment demand; in the general form of the *General Theory*, and particularly after Pigou effects of the real value of money had been built in, if you could engineer a massive reduction in wages and costs, there would have been some stimulating effects on consumption, investment, and on real output; finally, a careful neoclassical theory, which took proper account of rigidities and which analyzed induced shifts of velocity in a sophisticated way, might also have emerged with similar valid conclusions.)

While the Keynesian theories can be said to differ from the neoclassical theories with respect to analysis of deflation, Keynes himself was willing to asume that attainment of full employment would make prices and wages flexible upward. In How to Pay for the War (1939), he developed a theory of inflation which was quite like the neoclassical theory in its emphasis upon the demand-pull of aggregate spending even though it differed from that theory in its emphasis on total spending flow rather than on the stock of money. His theory of "demanders' inflation" stemmed primarily from the fact that government plus investors plus consumers want, in real terms among them, more than 100 per cent of the wartime or boomtime available produceable output. So prices have to rise to cheat the slow-to-spend of their desired shares. But the price rise closes the inflationary gap only temporarily, as the higher price level breeds higher incomes all around and the real gap reopens itself continually. And so the inflation goes on, at a rate determined by the degree of shifts to profit, the rapidity and extent of wage adjustments to the rising cost of living, and ultimately by the extent to which progressive tax receipts rise enough to close the gap. And, we may add, that firmness by the central bank in limiting the money supply might ultimately so increase credit tightness and so lower real balances as to bring consumption and investment spending into equilibrium with available civilian resources at some higher plateau of prices.

Cost-Push and Demand-Shift Theories of Inflation. In its most rigid form, the neoclassical model would require that wages fall whenever there is unemployment of labor and that prices fall whenever excess capacity exists in the sense that marginal cost of the output that firms sell is less than the prices they receive. A more eclectic model of imperfect competition in the factor and commodity markets is needed to explain the fact of price and wage rises before full employment and full capacity have been reached.

Similarly, the Keynes model, which assumes stickiness of wages even in the face of underemployment equilibrium, rests on various assumptions of imperfect competition. And when we recognize that, considerably before full employment of labor and plants has been reached,

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modern prices and wages seem to show a tendency to drift upward irreversibly, we see that the simple Keynesian system must be modified even further in the direction of an imperfect competition model.

Now the fact that an economic model in some degree involves imperfect competition does not necessarily imply that the concepts of competitive markets give little insight into the behavior of relative prices, resources allocations, and profitabilities. To some degree of approximation, the competitive model may cast light on these important real magnitudes, and for this purpose we might be content to use the competitive model. But to explain possible cost-push inflation, it would seem more economical from the very beginning to recognize that imperfect competition is the essence of the problem and to drop the perfect competition assumptions.

Once this is done, we recognize the qualitative possibility of cost-push inflation. Just as wages and prices may be sticky in the face of unemployment and overcapacity, so may they be pushing upward beyond what can be explained in terms of levels and shifts in demand. But to what degree these elements are important in explaining price behavior of any period becomes an important quantitative question. It is by no means always to be expected that by observing an economy's behavior over a given period will we be able to make a very good separation of its price rise into demand and cost elements. We simply cannot perform the controlled experiments necessary to make such a separation; and Mother Nature may not have economically given us the scatter and variation needed as a substitute for controlled experiments if we are to make approximate identification of the casual forces at work.

Many economists have argued that cost-push was important in the prosperous 1951-53 period, but that its effects on average prices were masked by the drop in flexible raw material prices. But again in 1955-58, it showed itself despite the fact that in a good deal of this period there seemed little evidence of over-all high employment and excess demand. Some holders of this view attribute the push to wage boosts engineered unilaterally by strong unions. But others give as much or more weight to the co-operative action of all sellers—organized and unorganized labor, semimonopsonistic managements, oligopolistic sellers in imperfect commodity markets—who raise prices and costs in an attempt by each to maintain or raise his share of national income, and who, among themselves, by trying to get more than 100 per cent of the available output, create "seller's inflation."

A variant of cost-push is provided by Charles Schultze's "demand-shift" theory of inflation. Strength of demand in certain sectors of the economy—e.g., capital goods industries in 1955-57—raises prices and

wages there. But elsewhere, even though demand is not particularly strong, downward inflexibility keeps prices from falling, and market power may even engineer a price-wage movement imitative in a degree of the sectors with strong demand. The result is an upward drift in average prices—with the suggestion that monetary and fiscal policies restrictive enough to prevent an average price rise would have to be so very restrictive as to produce a considerable level of unemployment and a significant drop in production.

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Truths and Consequences: The Problem of Identification. The competing (although imperfectly competing) theories of inflation appear to be genuinely different hypotheses about observable facts. In that case one ought to be able to distinguish empirically between cost and demand inflation. What are the earmarks? If I believe in cost-push, what should I expect to find in the facts that I would not expect to find were I a believer in demand-pull? The last clause is important. It will not do to point to circumstances which will accompany any inflation, however caused. A test must have what statisticians call power against the main alternative hypotheses.

Trite as these remarks may seem, they need to be made. The clichés of popular discussion fall into the trap again and again. Although they have been trampled often enough by experts, the errors revive. We will take the time to point the finger once more. We do this because we want to go one step further and argue that this problem of identification is exceedingly difficult. What appear at first to be subtle and reliable ways of distinguishing cost-induced from demand-induced inflation turn out to be far from airtight. In fact we are driven to the belief that aggregate data, recording the *ex post* details of completed transactions, may in most circumstances be quite insufficient. It may be necessary first to disaggregate.

Common Fallacies. The simplest mistake—to be found in almost any newspaper discussion of the subject—is the belief that if money wages rise faster than productivity, we have a sure sign of cost-inflation. Of course the truth is that in the purest of excess-demand inflation wages will rise faster than productivity; the only alternative is for the full increase in the value of a fixed output to be siphoned off into profits, without this spilling over into the labor market to drive wages up still further. This error is sometimes mixed with the belief that it is possible over long periods for industries with rapid productivity increase to pay higher and increasingly higher wages than those where output per man-hour grows slowly. Such a persistent and growing differential is likely eventually to alter the skill- or quality-mix of the labor force in

the different industries, which casts doubt on the original productivity comparison.

One sometimes sees statements to the effect that increases in expenditure more rapid than increases in real output necessarily spell demand inflation. It is simple arithmetic that expenditure outrunning output by itself spells only price increases and provides no evidence at all about the source or cause of the inflation. Much of the talk about "too much money chasing too few goods" is of this kind.

A more solemn version of the fallacy goes: An increase in expenditure can come about only through an increase in the stock of money or an increase in the velocity of circulation. Therefore the only possible causes of inflation are M and V and we need look no further.

Further Difficulties. It is more disconcerting to realize that even some of the empirical tests suggested in the professional literature may have little or no cutting power in distinguishing cost from demand inflation.

One thinks automatically of looking at the timing relationships. Do wage increases seem to precede price increases? Then the general rise in prices is caused by the wage-push. Do price increases seem to precede wage increases? Then more likely the inflation is of the excessdemand variety, and wages are being pulled up by a brisk demand for labor or they are responding to prior increases in the cost of living. There are at least three difficulties with this argument. The first is suggested by replacing "wage increase" by "chicken" and "price increase" by "egg." The trouble is that we have no normal initial standard from which to measure, no price level which has always existed and to which everyone has adjusted; so that a wage increase, if one occurs, must be autonomous and not a response to some prior change in the demand for labor. As an illustration of the difficulty of inference, consider average hourly earnings in the basic steel industry. They rose, relative to all manufacturing from 1950 on, including some periods when labor markets were not tight. Did this represent an autonomous wage-push? Or was it rather a delayed adjustment to the decline in steel wages relative to all manufacturing, which took place during the war, presumably as a consequence of the differential efficiency of wage control? And why should we take 1939 or 1941 as a standard for relative wages? And so on.

A related problem is that in a closely interdependent economy, effects can precede causes. Prices may begin to ease up because wage rates are expected to. And more important, as wage and price increases ripple through the economy, aggregation may easily distort the apparent timing relations.

But even if we could find the appearance of a controlled experiment, if after a period of stability in both we were to notice a wage increase

to a new plateau followed by a price increase, what could we safely conclude? It would be immensely tempting to make the obvious diagnosis of wage-push. But consider the following hypothetical chain of events: Prices in imperfect commodity markets respond only to changes in costs. Labor markets are perfectly competitive in effect, and the money wage moves rapidly in response to shifts in the demand for labor. So any burst of excess demand, government expenditure, say, would cause an increased demand for labor; wages would be pulled up; and only then would prices of commodities rise in response to the cost increase. So the obvious diagnosis might be wrong. In between, if we were clever, we might notice a temporary narrowing of margins, and with this information we might piece together the story.

Consider another sophisticated inference. In a single market, price may rise either because the demand curve shifts to the right or because the supply curve shifts to the left in consequence of cost increases. But in the first case, output should increase; in the second case, decline. Could we not reason, then, that if prices rise, sector by sector, with outputs, demand-pull must be at work? Very likely we can, but not with certainty. In the first place, as Schultze has argued, it is possible that certain sectors face excess demand, without there being aggregate pressure; those sectors will indeed show strong price increases and increases in output (or pressure on capacity). But in a real sense, the source of inflation is the failure of other sectors, in which excess capacity develops, to decrease their prices sufficiently. And this may be a consequence of "administered pricing," rigid markups, rigid wages and all the paraphernalia of the "new" inflation.

To go deeper, the reasoning we are scrutinizing may fail because it is illegitimate, even in this industry-by-industry way, to use partial equilibrium reasoning. Suppose wages rise. We are led to expect a decrease in output. But in the modern world, all or most wages are increasing. Nor is this the first time they have done so. And in the past, general wage and price increases have not resulted in any decrease in aggregate real demand—perhaps the contrary. So that even in a single industry supply and demand curves may not be independent. The shift in costs is accompanied by, indeed may bring about, a compensating shift in the subjectively-viewed demand curve facing the industry. And so prices may rise with no decline and possibly an increase in output. If there is anything in this line of thought, it may be that one of the important causes of inflation is—inflation.

The Need for Detail. In these last few paragraphs we have been arguing against the attempt to diagnose the source of inflation from aggregates. We have also suggested that sometimes the tell-tale symptoms can be discovered if we look not at the totals but at the parts. This

suggestion gains force when we recognize, as we must, that the same general price increase can easily be the consequence of different causes in different sectors. A monolithic theory may have its simplicity and style riddled by exceptions. Is there any reason, other than a desire for symmetry, for us to believe that the same reasoning must account for the above-average increase in the price of services and the aboveaverage increase in the price of machinery since 1951 or since 1949? Public utility prices undoubtedly were held down during the war, by the regulatory process; and services ride along on income-elastic demand accompanied by a slower-than-average recorded productivity increase. A faster-than-average price increase amounts to the corrective relativeprice change one would expect. The main factor in the machinery case, according to a recent Joint Economic Committee study, appears to have been a burst of excess demand occasioned by the investment boom of the mid-fifties. And to give still a third variant, Eckstein and Fromm in another Joint Economic Committee study suggest that the aboveaverage rise in the wages of steelworkers and the prices of steel products took place in the face of a somewhat less tight labor and product market than in machinery. They attribute it to a joint exercise of market power by the union and the industry. Right or wrong, it is mistaken theoretical tactics to deny this possibility on the grounds that it cannot account for the price history in other sectors.

Some Things It Would Be Good to Know. There are at least two classical questions which are relevant to our problem and on which surprisingly little work has been done: One is the behavior of real demand under inflationary conditions and the other is the behavior of money wages with respect to the level of employment. We comment briefly on these two questions because there seems to us to be some doubt that ordinary reversible behavior equations can be found, and this very difficulty points up an important question we have mentioned earlier: that a period of high demand and rising prices molds attitudes, expectations, even institutions in such a way as to bias the future in favor of further inflation. Unlike some other economists, we do not draw the firm conclusion that unless a firm stop is put, the rate of price increase must accelerate. We leave it as an open question: It may be that creeping inflation leads only to creeping inflation.

The standard way for an inflationary gap to burn itself out short of hyperinflation is for the very process of inflation to reduce real demands. The mechanisms, some dubious, some not, are well known: the shift to profit, real-balance effects, tax progression, squeeze on fixed incomes. If price and wage increases have this effect, then a cost-push inflation in the absence of excess demand inflicts unemployment and excess capacity on the system. The willingness to bear the reduced real

demand is a measure of the imperfectness of markets permitting the cost-push. But suppose real demands do not behave in this way? Suppose a wage-price rise has no effect on real demand, or a negligible one, or even a slight positive one? Then not only will the infliction not materialize, but the whole distinction between cost-push and demand-pull begins to evaporate. But is this possible? The older quantity theorists would certainly have denied it; but the increase in velocity between 1955 and 1957 would have surprised an older quantity theorist.

We do not know whether real demand behaves this way or not. But we think it important to realize that the more the recent past is dominated by inflation, by high employment, and by the belief that both will continue, the more likely is it that the process of inflation will preserve or even increase real demand, or the more heavily the monetary and fiscal authorities may have to bear down on demand in the interests of price stabilization. Real-income consciousness is a powerful force. The pressure on real balances from high prices will be partly relieved by the expectation of rising prices, as long as interest rates in an imperfect capital market fail to keep pace. The same expectations will induce schoolteachers, pensioners, and others to try to devise institutions to protect their real incomes from erosion by higher prices. To the extent that they succeed, their real demands will be unimpaired. As the fear of prolonged unemployment disappears and the experience of past full employment builds up accumulated savings, wage earners may also maintain their real expenditures; and the same forces may substantially increase the marginal propensity to spend out of profits, including retained earnings. If there is anything to this line of thought, the empirical problem of verification may be very difficult, because much of the experience of the past is irrelevant to the hypothesis. But it would be good to know.

The Fundamental Phillips Schedule Relating Unemployment and Wage Changes. Consider also the question of the relation between money wage changes and the degree of unemployment. We have A. W. Phillips' interesting paper on the U. K. history since the Civil War (our Civil War, that is!). His findings are remarkable, even if one disagrees with his interpretations.

In the first place, the period 1861-1913, during which the trade-union movement was rather weak, shows a fairly close relationship between the per cent change in wage rates and the fraction of the labor force unemployed. Due allowance must be made for sharp import-price-induced changes in the cost of living, and for the normal expectation that wages will be rising faster when an unemployment rate of 5 per cent is reached on the upswing than when it is reached on the down-swing. In the second place, with minor exceptions, the same relation-

ship that fits for 1861-1913 also seems to fit about as well for 1913-48 and 1948-57. And finally Phillips concludes that the money wage level would stabilize with 5 per cent unemployment; and the rate of increase of money wages would be held down to the 2-3 per cent rate of productivity increase with about $2\frac{1}{2}$ per cent of the labor force unemployed.

Strangely enough, no comparably careful study has been made for the U.S. Garbarino's 1950 note is hardly a full-scale analysis, and Schultze's treatment in his first-class Joint Committee monograph is much too casual. There is some evidence that the U.S. differs from the U.K. on at least two counts. If there is any such relationship characterizing the American labor market, it may have shifted somewhat in the last fifty to sixty years. Secondly, there is a suggestion that in this country it might take 8 to 10 per cent unemployment to stabilize money wages.

But would it take 8 to 10 per cent unemployment forever to stabilize the money wage? Is not this kind of relationship also one which depends heavily on remembered experience? We suspect that this is another way in which a past characterized by rising prices, high employment, and mild, short recessions is likely to breed an inflationary bias—by making the money wage more rigid downward, maybe even perversely inclined to rise during recessions on the grounds that things will soon be different.

There may be no such relation for this country. If there is, why does it not seem to have the same degree of long-run invariance as Phillips' curve for the U.K.? What geographical, economic, sociological facts account for the difference between the two countries? Is there a difference in labor mobility in the two countries? Do the different tolerances for unemployment reflect differences in income level, union organization, or what? What policy decisions might conceivably lead to a decrease in the critical unemployment rate at which wages begin to rise or to rise too fast? Clearly a careful study of this problem might pay handsome dividends.

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A Closer Look at the American Data. In spite of all its deficiencies, we think the accompanying scatter diagram in Figure 1 is useful. Where it does not provide answers, it at least asks interesting questions. We have plotted the yearly percentage changes of average hourly earnings in manufacturing, including supplements (Rees's data) against the annual average percentage of the labor force unemployed.

The first defect to note is the different coverages represented in the two axes. Duesenberry has argued that postwar wage increases in manufacturing on the one hand and in trade, services, etc., on the other, may have quite different explanations: union power in manufacturing and

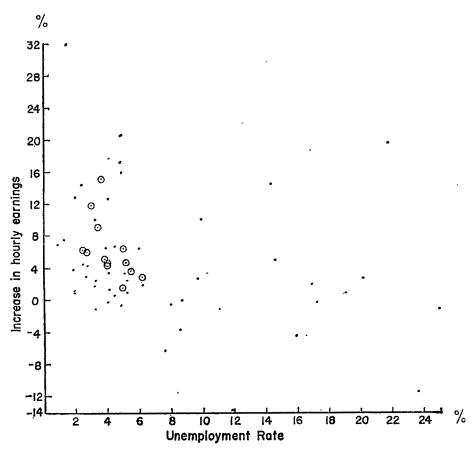


FIGURE 1
PHILLIPS SCATTER DIAGRAM FOR U.S.
(The circled points are for recent years.)

simple excess demand in the other sectors. It is probably true that if we had an unemployment rate for manufacturing alone, it would be somewhat higher during the postwar years than the aggregate figure shown. Even if a qualitative statement like this held true over the whole period, the increasing weight of services in the total might still create a bias. Another defect is our use of annual increments and averages, when a full-scale study would have to look carefully into the nuances of timing.

A first look at the scatter is discouraging; there are points all over the place. But perhaps one can notice some systematic effects. In the first place, the years from 1933 to 1941 appear to be *sui generis*: money wages rose or failed to fall in the face of massive unemployment. One may attribute this to the workings of the New Deal (the 20 per cent wage increase of 1934 must represent the NRA codes); or alternatively

one could argue that by 1933 much of the unemployment had become structural, insulated from the functioning labor market, so that in effect the vertical axis ought to be moved over to the right. This would leave something more like the normal pattern.

The early years of the first World War also behave atypically although not so much so as 1933-39. This may reflect cost-of-living increases, the rapidity of the increase in demand, a special tightness in manufacturing, or all three.

But the bulk of the observations—the period between the turn of the century and the first war, the decade between the end of that war and the Great Depression, and the most recent ten or twelve years—all show a rather consistent pattern. Wage rates do tend to rise when the labor market is tight, and the tighter the faster. What is most interesting is the strong suggestion that the relation, such as it is, has shifted upward slightly but noticeably in the forties and fifties. On the one hand, the first decade of the century and the twenties seem to fit the same pattern. Manufacturing wages seem to stabilize absolutely when 4 or 5 per cent of the labor force is unemployed; and wage increases equal to the productivity increase of 2 to 3 per cent per year is the normal pattern at about 3 per cent unemployment. This is not so terribly different from Phillips' results for the U.K., although the relation holds there with a greater consistency. We comment on this below.

On the other hand, from 1946 to the present, the pattern is fairly consistent and consistently different from the earlier period. The annual unemployment rate ranged only narrowly, from 2.5 per cent in 1953 to 6.2 per cent in 1958. Within that range, as might be expected, wages rose faster the lower the unemployment rate. But one would judge now that it would take more like 8 per cent unemployment to keep money wages from rising. And they would rise at 2 to 3 per cent per year with 5 or 6 per cent of the labor force unemployed.

It would be overhasty to conclude that the relation we have been discussing represents a reversible supply curve for labor along which an aggregate demand curve slides. If that were so, then movements along the curve might be dubbed standard demand-pull, and shifts of the curve might represent the institutional changes on which cost-push theories rest. The apparent shift in our Phillips' curve might be attributed by some economists to the new market power of trade-unions. Others might be more inclined to believe that the expectation of continued full employment, or at least high employment, is enough to explain both the shift in the supply curve, if it is that, and the willingness of employers (conscious that what they get from a work force is partly dependent on its morale and its turnover) to pay wage increases in periods of temporarily slack demand.

This latter consideration, however, casts real doubt on the facile identification of the relationship as merely a supply-of-labor phenomenon. There are two parties to a wage bargain.

U.S. and U.K. Compared. A comparison of the American position with Phillips' findings for the U.K. is interesting for itself and also as a possible guide to policy. Anything which will shift the relationship downward decreases the price in unemployment that must be paid when a policy is followed of holding down the rate of wage and price increase by pressure on aggregate demand.

One possibility is that the trade-union leadership is more "responsible" in the U.K.; indeed the postwar policy of wage restraint seems visible in Phillips' data. But there are other interpretations. It is clear that the more fractionated and imperfect a labor market is, the higher the over-all excess supply of labor may have to be before the average wage rate becomes stable and the less tight the relation will be in any case. Even a touch of downward inflexibility (and trade-unionism and administered wages surely means at least this) will make this immobility effect more pronounced. It would seem plausible that the sheer geographical compactness of the English economy makes its labor market more perfect than ours in this sense. Moreover, the British have pursued a more deliberate policy of relocation of industry to mop up pockets of structural unemployment.

This suggests that any governmental policy which increases the mobility of labor (geographical and industrial) or improves the flow of information in the labor market will have anti-inflationary effects as well as being desirable for other reasons. A quicker but in the long run probably less efficient approach might be for the government to direct the regional distribution of its expenditures more deliberately in terms of the existence of local unemployment and excess capacity.

The English data show a quite clearly nonlinear (hyperbolic) relation between wage changes and unemployment, reflecting the much discussed downward inflexibility. Our American figures do not contradict this, although they do not tell as plain a story as the English. To the extent that this nonlinearity exists, as Duesenberry has remarked, a given average level of unemployment over the cycle will be compatible with a slower rate of wage increase (and presumably price increase) the less wide the cyclical swings from top to bottom.

A less obvious implication of this point of view is that a deliberate low-pressure policy to stabilize the price level may have a certain self-defeating aspect. It is clear from experience that interregional and interindustrial mobility of labor depends heavily on the pull of job opportunities elsewhere, more so than on the push of local unemployment. In effect the imperfection of the labor market is increased, with the consequences we have sketched.

IV

We have concluded that it is not possible on the basis of a priori reasoning to reject either the demand-pull or cost-push hypothesis, or the variants of the latter such as demand-shift. We have also argued that the empirical identifications needed to distinguish between these hypotheses may be quite impossible from the experience of macrodata that is available to us; and that, while use of microdata might throw additional light on the problem, even here identification is fraught with difficulties and ambiguities.

Nevertheless, there is one area where policy interest and the desire for scientific understanding for its own sake come together. If by deliberate policy one engineered a sizable reduction of demand or refused to permit the increase in demand that would be needed to preserve high employment, one would have an experiment that could hope to distinguish between the validity of the demand-pull and the cost-push theory as we would operationally reformulate those theories. If a small relaxation of demand were followed by great moderations in the march of wages and other costs so that the social cost of a stable price index turned out to be very small in terms of sacrificed high-level employment and output, then the demand-pull hypothesis would have received its most important confirmation. On the other hand, if mild demand repression checked cost and price increases not at all or only mildly, so that considerable unemployment would have to be engineered before the price level updrift could be prevented, then the cost-push hypothesis would have received its most important confirmation. If the outcome of this experience turned out to be in between these extreme cases—as we ourselves would rather expect—then an element of validity would have to be conceded to both views; and dull as it is to have to embrace eclectic theories, scholars who wished to be realistic would have to steel themselves to doing so.

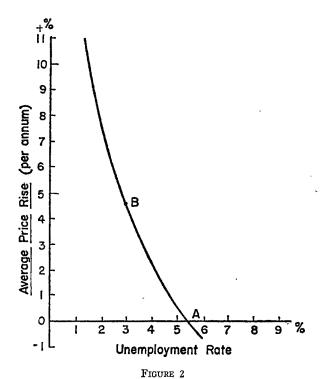
Of course, we have been talking glibly of a vast experiment. Actually such an operation would be fraught with implications for social welfare. Naturally, since they are confident that it would be a success, the believers in demand-pull ought to welcome such an experiment. But, equally naturally, the believers in cost-push would be dead set against such an engineered low-pressure economy, since they are equally convinced that it will be a dismal failure involving much needless social pain. (A third school, who believes in cost-push but think it can be cured or minimized by orthodox depressing of demand, think that our failure to make this experiment would be fraught with social evil by virtue of the fact that they expect a creep in prices to snowball into a trot and then a gallop.)

Our own view will by now have become evident. When we translate the Phillips diagram showing the American pattern of wage increase

against degree of unemployment into a related diagram showing the different levels of unemployment that would be "needed" for each degree of price level change, we come out with guesses like the following:

- 1. In order to have wages increase at no more than the $2\frac{1}{2}$ per cent per annum characteristic of our productivity growth, the American economy would seem on the basis of twentieth-century and postwar experience to have to undergo something like 5 to 6 per cent of the civilian labor force's being unemployed. That much unemployment would appear to be the cost of price stability in the years immediately ahead.
- 2. In order to achieve the nonperfectionist's goal of high enough output to give us no more than 3 per cent unemployment, the price index might have to rise by as much as 4 to 5 per cent per year. That much price rise would seem to be the necessary cost of high employment and production in the years immediately ahead.

All this is shown in our price-level modification of the Phillips curve, Figure 2. The point A, corresponding to price stability, is seen to involve about $5\frac{1}{2}$ per cent unemployment; whereas the point B, corre-



MODIFIED PHILLIPS CURVE FOR U.S.

This shows the menu of choice between different degrees of unemployment and price stability, as roughly estimated from last twenty-five years of American data.

sponding to 3 per cent unemployment, is seen to involve a price rise of about $4\frac{1}{2}$ per cent per annum. We rather expect that the tug of war of politics will end us up in the next few years somewhere in between these selected points. We shall probably have some price rise and some excess unemployment.

Aside from the usual warning that these are simply our best guesses we must give another caution. All of our discussion has been phrased in short-run terms, dealing with what might happen in the next few years. It would be wrong, though, to think that our Figure 2 menu that relates obtainable price and unemployment behavior will maintain its same shape in the longer run. What we do in a policy way during the next few years might cause it to shift in a definite way.

Thus, it is conceivable that after they had produced a low-pressure economy, the believers in demand-pull might be disappointed in the short run; i.e., prices might continue to rise even though unemployment was considerable. Nevertheless, it might be that the low-pressure demand would so act upon wage and other expectations as to shift the curve downward in the longer run—so that over a decade, the economy might enjoy higher employment with price stability than our present-day estimate would indicate.

But also the opposite is conceivable. A low-pressure economy might build up within itself over the years larger and larger amounts of structural unemployment (the reverse of what happened from 1941 to 1953 as a result of strong war and postwar demands). The result would be an upward shift of our menu of choice, with more and more unemployment being needed just to keep prices stable.

Since we have no conclusive or suggestive evidence on these conflicting issues, we shall not attempt to give judgment on them. Instead we venture the reminder that, in the years just ahead, the level of attained growth will be highly correlated with the degree of full employment and high-capacity output.

But what about the longer run? If the per annum rate of technical progress were about the same in a low- and high-pressure economy, then the initial loss in output in going to the low-pressure state would never be made up; however, in relative terms, the initial gap would not grow but would remain constant as time goes by. If a low-pressure economy could succeed in improving the efficiency of our productive factors, some of the loss of growth might be gradually made up and could in long enough time even be more than wiped out. On the other hand, if such an economy produced class warfare and social conflict and depressed the level of research and technical progress, the loss in growth would be compounded in the long run.

A final disclaimer is in order. We have not here entered upon the

important question of what feasible institutional reforms might be introduced to lessen the degree of disharmony between full employment and price stability. These could of course involve such wide-ranging issues as direct price and wage controls, antiunion and antitrust legislation, and a host of other measures hopefully designed to move the American Phillips' curves downward and to the left.

WAGE-PUSH AND ALL THAT

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Most discussions of this subject say, in effect: "Cost inflation is obviously a serious problem in the American economy. Unfortunately, there is little we can do about it." I propose to lend novelty to these proceedings by going in precisely the opposite direction. There is no clear evidence that cost inflation constitutes a serious problem—indeed, it is not even clear what kinds of evidence could be conclusive on this point. If it turns out that there is a serious problem, there are plenty of things we could do about it.

"Cost inflation" is an unfortunate term. It implies that, starting from a position of monetary equilibrium, this equilibrium is disrupted by autonomous changes on the cost side, no other change having occurred in the system. As an empirical phenomenon, this must be extremely rare. The nearest approach to it would perhaps be the rapid increase in import prices faced by many countries on the outbreak of the Korean war.

But let us not quibble over terms. It is clear what people usually mean—or should mean—when they speak of cost inflation. They mean that the structural characteristics of labor and product markets are such that demand fluctuations produce different price-output results than would ensue if all markets were perfectly competitive. These structural characteristics are often lumped under the omnibus title of monopoly power or seller' market power, which is supposed generally to exceed buyers' market power in the present American economy.

Such a statement of the case is of course simplified to the point of caricature. One cannot reason in the same way about labor markets as about product markets, one cannot neglect monopsony power, and one cannot work entirely in aggregative terms. The interesting relationships do not begin to appear until one has disaggregated to a sector or even an individual industry basis.

What We Know About Labor Market Reactions

My function here is presumably to explore the characteristics of labor markets which are important for framing and testing inflation models and for evaluating policy proposals. Let me first clear out of the way a few positive things which can be said about labor markets before going on to matters about which we still know very little.

- 1. Wages are cost-determined in the sense that they will normally rise by at least as much as workers' living costs, and with only a short lag. An examination of average hourly earnings in U.S. manufacturing over the period 1889-1957 shows that in only seven of these sixty-eight years was a rise in the consumer price index accompanied by a fall in real hourly earnings, and four of these years—1919, 1920, 1945, and 1946—might be regarded as abnormal. Klein and Ball, using an average six-month lag, find a strong relation between wage and cost-of-living movements in the United Kingdom over the period 1948-57. To quote: "Wage-rate adjustment to price changes has in effect roughly compensated for the effects of price increases between the times at which increases in wage rates have been obtained." The coefficient of the living cost term in their wage change equation is 0.854, with a sampling error of 0.092.
- 2. Wages are very sticky in a downward direction, short of a major price decline. This has been true for as far back as our records extend. Examination of hourly earnings in U.S. manufacturing from 1889 to 1957 shows appreciable declines only during the great depression of the nineties, the postwar price collapse of 1920-22, and the great depression of 1929-33. (It is true, however, that in several minor depressions occurring before World War II wages had the good grace to mark time, while since 1945 they have advanced considerably even in recession years. This may well constitute a permanent structural change in the economy.)
- 3. Since unionism became widespread in the American economy during the thirties, there is no clear indication that wages of unionized manual workers have advanced faster than those of nonunion manual workers. Unionism may well have had other effects, but the "wage distortion effect" feared by Henry Simons and other critics of union monopoly does not seem to have been very important.

It is true that earnings of manual workers as a whole have risen a good deal faster since 1939 than earnings of white-collar workers. It is mainly for this reason that wage-productivity relations appear more favorable to manual labor than they did at an earlier time. Albert Rees has made some interesting calculations, which indicate that from 1889 to 1929 the real hourly compensation of manufacturing workers rose at almost exactly the same average rate as output per unit of labor and capital combined in the private domestic economy. This means that real hourly earnings rose considerably less than output per man-hour of labor alone. From 1929 to 1957, however, a quite different pattern appears. Real earnings per man-hour have risen considerably faster (3.5)

¹L. R. Klein and R. J. Ball, "Some Econometrics of the Determination of Absolute Prices and Wages," *Econ. J.*, Sept., 1959, p. 473.

per cent per year) than output per production worker man-hour (2.7 per cent) and much faster than output per unit of labor and capital combined (2.1 per cent).2 This has come about mainly through encroachment of wage rates on salary levels and a reduced yield on fixed-income securities. Unionism may have had something to do with all this; but one can also find economic reasons for what has occurred-notably the cutting off of mass immigration of low-skilled workers and the greatly increased supply of labor to white-collar occupations resulting from higher educational standards.

What We Do Not Know About Labor Market Reactions

Wages and Unemployment. Turning from areas where we have some information to areas where we are largely ignorant, may I suggest first that we know little about relations between money wages and the level and rate of change of unemployment.3 There has been a great guessing game in recent years as to what level of unemployment would result in no wage increase or in some proper (moderate) rate of wage increase.

The results of this work are still quite inconclusive. Phillips' scatter diagrams for the years 1861-1957 in the United Kingdom show a general downward drift to the right as one would expect-higher unemployment is related to smaller wage increases. But the variance is quite large. For the postwar years one finds that unemployment of between 1 and 2 per cent has been associated with wage increases of anything from 2 to 8 per cent per year (excluding an abnormal Korean war increase of 10½ per cent in 1950). Such a loose relation is not very useful to the policy-maker. Looking at the Samuelson-Solow diagram for the United States (and excluding years of obviously strong demand inflation), one notes that unemployment in the neighborhood of 5 per cent has been accompanied by everything from a slight wage decrease in one year to a 6 per cent increase in another year. I am not sure, then, how meaningful it is to say that 5 per cent unemployment will on the average give us a 21/2 per cent rate of wage increase, which might correspond to price stability. It will give a good deal more than that in some years, a good deal less in others, depending on factors omitted from this simple correlation.

Why are the results of this sort of analysis so inconclusive? There are probably several reasons:

There are the usual pitfalls of aggregation. It is the unemployment situation in specific labor markets which influences specific wage deci-

² Albert Rees, "Patterns of Wages, Prices, and Productivity," in Wages, Prices, Profits, and Productivity (American Assembly, 1959), pp. 11-35.

³ See, however, the interesting suggestions in Klein and Ball, op. cit., and A. W. Phillips, "The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957," Economica, 1958, pp. 283-300.

sions. The way in which unemployment is distributed over the economy at a particular time—for example, whether it is concentrated in sectors where wages are somewhat sensitive to employment considerations or in sectors where wages are not so sensitive—may make a substantial difference in the average size of wage movements.

Insofar as unemployment is taken to indicate the state of aggregate demand, profits, and employers' ability to pay, it is the direction and rate of change of unemployment which is important. More than this, it is expected movements of demand, output, and profits over the near future which are significant for company and union wage strategies. An unemployment level of 5 per cent which is expected soon to be 3 per cent will have quite different results from a 5 per cent rate which it is feared may become 8 or 10 per cent.⁴

The number of full-time unemployed, standing by itself, is not a very good indicator of the tightness of the labor market. There are several reasons for this: (1) Part of total unemployment at any time is structural, part is frictional, and part may be true excess labor supply; and all these components are changing simultaneously. Changes in excess labor supply can thus not be inferred directly from changes in the total. (2) It does not reveal the extent of part-time unemployment, disguised unemployment, and flexibility of the labor force, which may be as important in the aggregate as the number of full-time unemployed. (3) It says nothing about the number of vacancies relative to the number of unemployed, which is an important part of the labor market picture.

One should not expect, then, to find a strong aggregative relation between "crude" unemployment rates and changes in money wages. There is undoubtedly much useful work which can be done in this area, but it will take more refined techniques than those which have been used up to now.

Productivity in the Short Run. A second area which needs investigation is that of input-output relations in the short run. Contrary to their usual bias, economists tend to think of productivity in long-range terms. Increases in man-hour output are presumed to rest mainly on additions to the capital stock and on innovations. Over short periods, however, changes in the level of output are clearly very important. During a cycle upswing, man-hour output rises at an accelerated rate. When output is stationary or falling, increases in man-hour ouput are apt to be small or negative. What happened in the U.S. during 1955-57, for example, was not that wages rose unusually fast but that productivity rose unusually little; and this was related to the fact that total output of the economy rose at a disappointingly slow rate during these years.

⁴ In fairness to Phillips, one must add that he did try to take some account of direction of change of unemployment—though using a rather rough method—and found it to be clearly significant.

An important reason for this behavior of productivity is that employee costs are becoming increasingly overhead costs. The ratio of technical, supervisory, and administrative personnel to production workers is rising quite rapidly, and these people typically enjoy a "guaranteed annual wage." Even production workers are not laid off as freely as they were a generation ago. Thus man-hours and payrolls fall less than proportionately to output on the downswing and rise less than proportionately on the upswing.

An interesting corollary of this is that policies designed to restrict the rise of aggregate demand, if applied before the economy is operating at full capacity, may work in an inflationary direction rather than the reverse. A retardation of the increase in total output will produce a corresponding retardation of the rise in man-hour output. If the rise in productivity is retarded by more than the rise in money wages, labor costs per unit of output will increase and this may produce upward pressure on the price level.

The Labor Market in Sector Inflation. One of the most interesting recent essays on inflation is Charles Schultze's study for the Joint Economic Committee.⁵ He points out that inflation may arise neither from an autonomous wage-push nor from an excess of aggregate demand but rather from a sharp shift in the composition of demand; and he argues quite persuasively that the price increase of 1955-57 in the United States was of this general character. His model works essentially as follows: There is a shift of demand away from some sectors of the economy, whose output declines, toward others whose output rises. Prices and wages are presumed to be flexible upward but not downward. They will thus increase in sectors where demand is increasing and these increases will not be offset by declines in the shrinking sectors. Thus the average level of wages and prices must rise. Further, the sectors faced with a sagging demand will be forced to keep roughly in step with the rising wage level of the expanding industries. Their costs will rise and, if cost-plus pricing methods are used, one may find the paradox of rising prices in the face of falling demand.

Labor market reactions are involved at two stages in this argument, and each poses a key question concerning wage determinations. First, why should expansion of output in certain sectors lead to wage increase in those sectors while there is still unemployment in the economy as a whole? Schultze's explanation, which he bases partly on previous work by Garbarino, Kuhn, and other labor economists, leans heavily on the oligopolistic character of product markets. Rising output and sales bring higher profits to the expanding industries. These profits could conceivably go into price reductions, or wage increases, or be retained

⁵ Charles L. Schultze, Recent Inflation in the United States, prepared for use of the Joint Economic Committee (Washington: Government Printing Office, 1959).

by the company. In an oligopolistic setting, however, price reductions are dangerous, because they may be interpreted as aggression by other producers. There is no ready way of getting agreement on the extent of price reductions and controlling the process of price cutting once it has begun. Wage increases are safer because they are naturally self-limiting. They also have positive advantages for management. Paying more than the prevailing wage level in its area puts a company in a good position to tap the flow of labor coming into the market, to recruit high-quality workers, and to expand employment quickly when desired. It also adds to management's self-esteem, pacifies the union, and maintains worker good will. Thus the natural course will be for management to retain part of the larger earnings for reinvestment and other purposes, but to pass out part in wage increases designed to buttress the company's position as a wage leader.

This line of explanation does not rely either on immediate recruitment needs (the "market" explanation) or on union pressure (the commonest sort of "institutional" explanation). It rests rather on protected pricing and management judgments about long-run strategic advantage. Union pressure may enter as a reinforcing factor, but it is not a necessary part of the model. This is an intriguing hypothesis, which is not contradicted by what is presently known about the wage policies of large corporations.

Second, how are the wage increases in the expanding and prosperous sectors transmitted, apparently with almost undiminished force, to other sectors of the economy? One can rely in part on worker expectations that increases made by large and highly visible companies in an area will be "matched" by their own employers and on management beliefs that failure to do this will lead to disaffection and loss of worker efficiency. At times of very high employment, too, firms which lag behind the procession will experience recruitment difficulties and be forced to raise wages on this account. Competitive emulation among trade-unions in various industries may also be of some importance. But we do not know very much about the relative weight of these factors under various circumstances.

The Present Versus the Past. I have already implied that we do not know how far the reaction mechanisms in the American economy of 1960 differ from those of 1930 or 1910. Reiteration of terms such as "the new inflation" has created a popular impression that there has been a substantial change and that somebody knows what it is. It would be better to admit frankly that we do not know, and to add this to our areas of ignorance. If one wanted to be aggressive rather than merely

⁶ Professor Schultze finds that, over the years 1953-57, the top 25 per cent of industries in terms of production increase showed an increase of 18 per cent in average hourly earnings, compared with an average of 17 per cent for all industries. A scatter diagram of wage changes against output changes showed no systematic relationship. *Op. cit.*, p. 65.

agnostic, one might ask: Why should there have been any substantial change over the past fifty years? Oligopoly in product markets, which is the key element in Schultze's model and many others, is a good deal older than that. In manufacturing, at least, industrial concentration does not seem to have changed significantly since about 1910.7

But what about trade-unionism, which in most industries is largely a post-1930 development? The wage effects of unionism could easily be the subject of another paper.8 Briefly, the primary effect of unionism is a "tidying up" of the wage structure within particular industries—a reduction of intercompany differences and of geographical differences, establishment of a definite occupational rate schedule, and the like. These micro effects are of considerable importance. But there is no clear evidence that unionism has much independent influence on the big things—the average rate of increase in money and real wage levels, or relative earnings in different industries and sectors of the economy. Unionism seems to ride the coat tails of oligopoly quite effectively in some branches of heavy industry, but its status is still that of junior partner rather than prime mover.9

The impression that the recent past differs from the more distant past, then, comes down mainly to the fact that there has been no serious depression since 1945. This is surely commendable, and one may hope that this happy experience will be repeated during the sixties. We should remember, however, that in 1928 our profession had become converted to a "permanent prosperity" hypothesis, while in 1939 an influential school was predicting secular stagnation. Adherents of "new era" hypotheses of any type would be well advised to take a long view of history.

Some Possible Lines of Policy

This leads me to a few remarks concerning what might be done about the inflation problem—if it turns out that there really is a continuing problem. On the negative side, I am unimpressed by two purported remedies. The first is the proposal to split up national trade-unions into company-sized bargaining units. I do not think one can presume that a national union is invariably stronger than the employers it confronts, or that company-sized units would always be weaker. Establishing

⁸ For my views on this matter, and for a summary of the evidence, see L. G. Reynolds and C. Taft, *The Evolution of Wage Structure* (Yale Univ. Press, 1956), Chap. 7, and L. G. Reynolds, "Wage Behavior and Inflation: An International View," in *Wages, Prices, Profits, and Productivity* (American Assembly, 1959), pp. 107-36.

⁸ Steel wage rates, for example, seem to have risen at an abnormal rate from 1953-58,

rather more than double the rate in manufacturing as a whole. But steel prices also rose rapidly and profit margins widened. The companies followed a policy of low break-even points, high margins, and "soft bargaining" with the union rather than the (at least hypothetically possible) opposite constellation of policies. The union could scarcely have been expected to object to this orientation of company policy, or to have failed to take advantage of it. On this range of issues, see Otto Eckstein and Gary Fromm, "Steel and the Postwar Inflation" (Joint Economic Committee, 1959).

Joe S. Bain, Industrial Organization (Wiley, 1959), Chap. 6.

company-sized units would certainly reduce union strength in the men's clothing industry, but it would not necessarily do so in the basic steel industry. There would be a loss as regards the rationalizing effect which a national union has on the intraindustry wage structure; and the presumed beneficial effects on the money wage level are, I think, quite conjectural.

Second, it does not seem to me feasible to use general monetary restriction to control inflations which do not result from aggregate excess demand. (Where over-all demand is excessive, monetary restraint is of course the traditional and appropriate remedy; but we have not actually been in this situation since the end of the Korean war.) For inflations of the 1955-57 variety I would be inclined to agree with Schultze's judgment:

Since it does not stem primarily from aggregate excess demand, but largely from excess demand in particular sectors of the economy, a slow increase in prices cannot be controlled by general monetary and fiscal policy if full employment is to be maintained. When, as in recent years, prices are rising during a period of growing excess capacity, a further restriction of aggregate demand is more likely to raise costs by reducing productivity than it is to lower costs by reducing wages and profit margins.¹⁰

What, then, might be done to render the economic mechanism less susceptible to inflationary movements? The suggestions which occur to me are rather trite, and one cannot be sure how much effect they would have. For what it is worth, however, my list would include:

Selective Restraint in Sectors of Excess Demand. If the problem is that the composition of demand has shifted sharply and is putting pressure on certain sectors of the economy, one might perhaps find ways of restraining demand in those sectors while stimulating it in others. During 1955-57 there was no need to restrain demand for automobiles or houses, because these industries were already operating below capacity. But if any way could have been found to moderate or stretch out the plant and equipment boom, this would have tended to reduce the degree of inflation. Fiscal devices would perhaps be most useful for this purpose; for example, the Swedish technique of giving a tax advantage to companies which are willing to set aside profits during peak prosperity and use them for reinvestment during a cyclical downswing.

Review of Cost-Price Behavior in Key Industries. The problem of possible inflationary price behavior is not spread thinly and evenly over the entire economy. It is concentrated in a limited number of industries which have an oligopolistic market structure and are subject to waves of excess demand. Such industries should be kept under continuous statistical surveillance and there should be frequent reports concerning their cost, productivity, price, and profit behavior. The recent Wilson report on machinery prices and the Eckstein-Fromm report on steel are interesting and useful documents. While the steel

¹⁰ Op. cit., p. 2.

report carefully refrains from imputing blame, neither industry nor union officials emerge from it in a very statesmanlike light.

Some would go farther and make wage and price increases in key industries subject to review and approval by a governmental board. This strikes me as rather dangerous and probably unnecessary under peacetime conditions. I would suggest investigation and publicity as a first step; and the industries concerned would be well advised to cooperate in this sort of moderate program, lest worse befall them.

Structural Reforms. Policies designed to influence behavior within a given market structure are in a sense superficial. If the inflation problem is rooted in the market structure itself, then we must look to structural reform for adequate remedies. What might be done to alter the structure of industry so as to reduce the likelihood of inflationary behavior? There are several possibilities:

Concentrated oligopoly is the hallmark of the group of industries with which we are dealing. Anything which would reduce the degree of concentration and of tacit price collusion would cut close to the root of the problem. The widespread feeling that "nothing can be done about oligopoly" is not correct in my judgment. The truth is rather that the available remedies—mainly, dissolution proceedings under the Sherman Act—are sufficiently drastic that we hesitate to use them.

Reduction of tariffs and other barriers to international trade would expose American price movements to the moderating force of foreign competition. If we did only this, without curbing internal inflationary tendencies, we would of course simply be trading a price problem for a balance-of-payments problem. But this would be a useful element in a more comprehensive program.

While industry needs to be weakened on the price side, it probably needs to be strengthened on the wage side. I would encourage employers in each industry to form a common front for collective bargaining with the union—a practice which already exists in some American industries and is even more common abroad. It may seem illogical to encourage bilateral monopoly in labor markets while working toward freer competition in product markets, but I see no necessary contradiction in practice. A non-utopian approach to economic policy involves accepting a generous measure of paradox.

There is much to be said for the Swedish system of an annual industy-union-government conference on the economic outlook. This conference is held before the wage bargaining season begins. Government economists present a forecast of the evolution of the national economy during the coming year, including estimated increases in real national output, real personal income, and real wage payments. The estimates are subjected to technical criticism by union and industry economists. The result is not any sort of agreement on price or wage

policy; but the discussions probably serve to narrow the range of reasonable differences of opinion about what will be feasible in the year ahead.

Could anything be done to reduce the wide cyclical fluctuation of reported corporate profits? Might it be possible, through changes in corporate accounting and tax legislation, to smooth out short-term profit fluctuations somewhat, and to distinguish more clearly between profits destined for stockholders and profits destined for reinvestment? This might reduce any tendency toward outsize wage increases during cycle upswings. It might also reduce management's tendency to set low break-even points as a security measure, and enable price policies to be viewed in a longer range context. Smoothing out the business cycle itself would obviously be still more effective in these respects.

Accelerating the Rise of National Output. It is myopic to view the inflation problem as one of restricting demand without considering the possibility of increasing output. There is a familiar saying that the course of prices depends on a race between the union business agent and the engineer. But why is our first reaction to tie lead weights to the business agent? Why not some benzedrine for the engineer instead?

The rate of increase in national output per capita should not be taken as a datum. It might be possible to raise it appreciably by greater investment in scientific and technological research, by efforts to raise the level of savings—surprisingly low for such a wealthy country—by tax arrangements designed to stimulate plant and equipment investment, and in other ways. Our national economic policies at present are not growth-oriented; and this is perhaps one reason why our growth rate in recent years has been markedly below that of Western Europe and even below that of many of the underdeveloped countries.

There is a fashionable thesis that output is no longer important in the American economy—that we have goods running out of our ears and should turn our attention to other things. In the first place, I do not think that living standards are yet ample for the average American family. And even if this were true, it would be in a sense irrelevant. An economy of our particular sort must expand at a reasonably rapid rate or fall prey to various ailments, of which inflation is by no means the worst.

It may be that a venturesome and expansionist economic policy would generate even more pressure on the price level than we have experienced since 1952. But there seems a good chance that we might achieve an acceleration of productivity growth which would satisfy all reasonable demands for real wage increases. Given our present position in the world economy, can we do other than take a calculated risk in this direction?

INFLATION: SOME LESSONS OF RECENT FOREIGN EXPERIENCE

By Arthur W. Marget
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Ι

Some months ago, in the Hearings before the Joint Committee on Employment, Growth, and Price Levels, the late Professor Sumner Slichter presented a table showing "the increase in the consumer price levels and the increase in real product per capita in 15 countries." What light could a comparison of these two rates of increase be expected to throw on the validity of one of Professor Slichter's main propositions; namely, that a sustained "slow rise in the price level ["creeping inflation"] is an inescapable cost of the maximum rate of growth?" I suggest that any such comparison should start by asking two broad questions: (1) Have there been significant cases of countries with a relatively high rank in terms of percentage increase in real product per capita which also show relatively low percentages of price increase? (2) In the case of countries in which a relatively high rank in terms of percentage increase in real product per capita has been associated with a relatively high percentage of price increase, how sustainable has the rate of growth in real product proved to be?

Unfortunately, Professor Slichter did not include Germany in his list of countries comparing increases in real product and increases in prices, although, in a later table, he provided some price data for that country.³ Actually, over the period chosen by Professor Slichter, Germany showed one of the highest percentages of increase in real product per capita in combination with one of the lowest percentages of increase in prices.⁴ And the case of Germany is by no means unique in this respect. Italy,

¹ Hearings, 86th Cong., 1st sess., Part 1, p. 11. ² Hearings, p. 8.

The "later table" referred to is on page 12 of the Hearings. It was reproduced in a subsequent address by Professor Slichter (published under the title, "Inflation—A Problem of Shrinking Importance," in the Com. and Fin. Chron., Apr. 23, 1959), with the insertion of price data for four countries—Finland, Ireland, Netherlands, and Spain—which had unaccountably been omitted from the table as given by Professor Slichter in his testimony of March 20, 1959.

^{*}See the table given in the Annex to this paper, which differs from that presented by Professor Slichter, apart from the addition of Germany, only in that (1) figures are given for per cent increase in real product per capita for both 1948-56 and 1948-57 (see note 8, below); (2) Professor Slichter's figures are corrected whenever his source indicates "a break in the homogeneity of the series"; (3) columns are added showing annual averages; and (4) countries are listed in the order of rank in terms of per cent increase in real product per capita instead of in terms of per cent increase in prices.

for example, which stands relatively low in Professor Slichter's ranking of countries by "per cent increase in consumer price index," is given a very high relative ranking by his own figures in terms of annual percentage increase in real product per capita over the period in question.

Surely there is small basis in the experience of these two countries, when judged against the experience of the other countries in Professor Slichter's list, to support the suggestion that inflation "is an inescapable cost of the maximum rate of growth." Perhaps Professor Slichter meant to argue, nevertheless, that the experience of the fifteen foreign countries was still on his side, since he included even Germany and Italy among "the important industrial countries of the free world" all of which "have had creeping inflation during the last few years." But surely it is a relevant reply to point to his own figures with respect to the relative degree of price rise shown in the other countries on his list, and to ask whether countries like Germany and Italy, which were denounced roundly enough as it was for their unwillingness to adopt fiscal and monetary policies that would have permitted them to join the inflationary procession, are not to be congratulated for having done as well as they did in resisting "importation" of the inflation that their neighbors were creating.

Unfortunately for Professor Slichter's thesis, also, his figures do not support his generalization in the case of other countries on his list. He pointed out, for example, that, according to his table, "Austria, with the greatest increase in the consumer price index, also had the greatest increase in real output" per capita.6 But in the case of Austria, the overwhelmingly greater part of the price rise shown in Professor Slichter's table took place before 1952, by which date the cost of living had actually doubled as compared with its level in 1948—an average rise, therefore, of 25 per cent per annum; whereas from 1952 to 1956 the average price rise per annum was less than 2 per cent. On the other hand, the average annual increase in real product per capita in Austria from 1952 to 1956 was 7.3 per cent. Similarly in the case of the Netherlands, from 1948 to 1951 the average annual price rise was almost 9 per cent, while the average annual increase in real product per capita was 3.2 per cent. From 1951 to 1956, on the other hand, while the average annual rate of price rise dropped to 1.8 per cent, the average annual increase in real product per capita actually rose to 4.6 per cent.

With respect to our second question—the sustainability of the rates of growth in real product—it is proper to point out that there is not a single case, in Professor Slichter's list of foreign countries, in which a relatively high rank in terms of percentage increase in real product per

^b Hearings, p. 12.

The "per man-hour" in the Hearings, p. 11, is obviously a slip.

capita has been associated with a relatively high percentage of price increase without that country's getting into such serious difficulties that a sudden halt had to be called to those "expansionist" monetary and fiscal policies which were alleged by their defenders to be the only kind of policies compatible with the "maximum rate of growth." To be convinced of this, one has only to rearrange Professor Slichter's list of countries in such a way as to rank them in order of average annual increase in real product per capita.7 Let us then take as our dividing line the case of Belgium, on which Professor Slichter commented especially, as a country which, having had a relatively small increase in its price level, also had a relatively small increase in real per capita output (actually, in terms of annual average increase in real output per capita, Belgium holds a midway position, ranking eighth in Professor Slichter's list of sixteen countries). We then discover this: The countries which showed a higher average annual increase in real per capita output than Belgium were either countries (namely, Germany, Italy, the Netherlands after 1951, and Austria after 1952) which, like Belgium, showed relatively small price increases, or were countries (such as France, Spain, and Finland) which were destined, in the near future, to undergo a major financial and economic crisis.8

In these cases which culminated in major financial and economic crises, the result was due to two principal errors:

1. It was an error to overstate the role of potential increases in output as an anti-inflationary force. This, in turn, was due to two factors.

First, the argument involved a degree of analytical primitiveness that was not made respectable simply by referring to Keynes's General Theory, or by quoting some of that book's least fortunate propositions, without even the benefit of such qualifications with respect to the "simplifying" nature of Keynes's "assumptions" as he himself provided.9 The only kind of analytical apparatus which can serve us here

⁷ See the Annex to this paper.

^{*}See the Annex to this paper.

8 Incorporation, in a separate column in the Annex to this paper, of the data for 1957 from the United Nations Statistical Yearbook for 1958 (the latest issue available at the time this paper was prepared), confirms these conclusions, and, if anything, strengthens them. One notes, for example, that Switzerland, which Professor Slichter had selected for special comment (Hearings, p. 11) as the country which, "with the most stable price level, had one of the smallest increases in per capita real output," while it continues to show the layer to appear the size when the force for 1957 is included, now igning the the lowest annual average price rise when the figure for 1957 is included, now joins the group of those "stable" countries—Germany, Italy, Austria, and the Netherlands—which showed an annual rate of increase in per capita real output greater than that shown by Belgium, the latter now ranking ninth (instead of eighth) in the list of sixteen countries. As for the three "unstable" countries in the group above Belgium on the list—France, As for the three "unstable" countries in the group above Belgium on the list—France, Finland, and Spain—all three were to go through a financial and economic crisis which culminated in a stabilization program involving, among other things, a devaluation of the currency. The Finnish markka was devalued in September, 1957; the stabilization of the French franc proceeded by stages which culminated in the further devaluation of the franc in December, 1958; the Spanish stabilization program, which included devaluation of the peseta, was inaugurated in July, 1959.

*See pp. 295 ff. of the General Theory.

is one which, while retaining the basic conception of the determination of realized prices and quantities sold as the result of the confrontation of the streams of money spending and of goods sold, respectively, would incorporate into a comprehensive analytical structure of money flows and goods flows not only what we know from "monetary" theory, so-called, but also what we know from the so-called "general theory of value" and from the study of institutional practice.¹⁰

Secondly, the argument, by simply assuming that as long as any increment in the goods stream is possible, this increment will always be sufficient to match the increment in the stream of money spending, would simplify out of existence the essential problem of the monetary authorities, which is this: to see to it that their actions, within the sphere of phenomena they are able to affect, are such as to conduce to the establishment of a level of money-spending sufficient to support a sustainable rate of growth, without overflowing into the phenomena of inflation.

2. It was also an error to ignore the fact that a continuing increase in output itself becomes unsustainable whenever it becomes based upon the utilization of external resources which are limited in amount. The obviousness of this proposition was masked by a tendency to put the blame for the stoppage of expansion on the countries which refused to inflate pari passu with the "expanding" countries. But, of course, while it is true that if these other countries had in fact inflated pari passu, the first group of countries might not have lost their foreign exchange reserves; neither would they have then acquired the real resources into which they converted these foreign exchange reserves and which enabled them to increase their output to a level which became unsustainable precisely because their foreign exchange reserves were not unlimited. And if the suggestion is that, by failing to join in such a comradely inflation, countries such as Germany and Italy—to take two outstanding examples—condemned their trading partners to a rate of growth no greater than their own, I call attention again to the rank which these two countries have in a table of growth rates derived from the statistics adduced by Professor Slichter.

The meeting point of these bodies of doctrine is that at which the curves of demand $D_p = F(p)$ and supply $q = \emptyset(p)$ are brought into relation with stream equations of the form D = pq and thence $MV = \Sigma D$. I would be glad to give here a reference to some work other than my Theory of Prices if I knew of one which attempted to do, on a sufficiently large scale, what I attempted to do in that work. Since, however, I do not know of such a work, I venture, with complete lack of modesty, to invite attention especially to Vol. II, Parts Two and Three, of my own book. But I wish to take this occasion also to note that some facets of this aspect of the Theory of Prices have been commented on recently by Manuel Gottlieb, "Price and Value in Industrial Markets," Econ. J., 1959, pp. 23, 29, 31, although not directly in connection with the problems with which this paper is concerned.

II

Professor Slichter relied on a second table for support when he characterized as "a widely disseminated bit of nonsense" the statement that "creeping inflation is said inevitably to become a gallop." One has only to look at this second table, he suggested, to see that "all of the important industrial countries of the free world have had creeping inflation during the last few years, yet in every case except Switzerland and Belgium the rise in the consumer price index was less in the period 1953-57 than in the period 1948-53." But surely the next question is this: Why did this come about? In the case of France, the principal thing that was happening in the latter part of the period was that the internal consequences of the existing inflationary pressure were being masked by the exhaustion of the country's foreign exchange resources. When these reserves were exhausted, the authorities were driven to adopt measures in the fiscal and monetary field which, had they been adopted earlier, would have avoided the crisis that culminated in the drastic program of December, 1958. In the case of Austria, it lay in the fact that the Austrian authorities adopted, in 1952, a similarly rigorous program of fiscal and monetary stabilization. And in the case of the other countries included in Professor Slichter's table, the reason, in every case, was that the policies pursued by monetary authorities were conditioned by a concern lest the creeping inflation turn out to have much more serious consequences than it might seem to have been incurring at the moment. In short, if creeping inflation has not yet turned into something worse—the case of France from 1956 to 1958 shows that this "something worse" need not take the form of a "gallop" in terms of internal price rise—this is because the monetary authorities, in particular, have tried to do something to prevent that "something worse" from happening.

This much was on occasion not only admitted, but insisted upon, by Professor Slichter himself. This is how he put the matter, for example, in commenting on his table in an address delivered a month after his appearance before the Joint Committee: "Various reasons enter into the tendency for the rate of increase in prices to drop, but the most important of these reasons is the simple and obvious fact that it takes money to buy goods. If people wish to buy in anticipation of higher prices, either they must curtail their purchases of many things . . . or they must draw on their credit. Their ability to draw upon their credit depends upon their creditworthiness and partly upon the reserve position of the banks. Consequently, whether or not creeping inflation be-

¹¹ Hearings, p. 12. Cf., also, the paper referred to in note 3 above.

comes a gallop rests in the last analysis with the monetary authorities."12 Yet if this is so, the most important question we have to ask about creeping inflation is not whether it did or did not turn into galloping inflation in the years 1953 to 1957, or any other particular set of years one chooses to adduce. The question we have to ask is this: Is there anything about the acceptance of creeping inflation as inevitable which would threaten to undermine the power of the monetary authorities to carry out their responsibilities? The answer, surely, is unequivocal: In any country in which the size and composition of the public debt is a matter of concern, the acceptance of creeping inflation as inevitable must mean a progressive deterioration in the prospects for the government's selling long-term fixed-interest-bearing securities. This means a progressive deterioration in the structure of the government debt in the direction of an overloading with short-dated securities. And as long as the holders of short-dated securities have only to wait for these securities to mature in order to obtain cash, the prospect of debt-monetization on a large scale will continue to threaten the control of the monetary authority over the one magnitude which is crucial to the exercise of its powers; namely, the money supply. This is not a chimera invented by central bankers solely for the purpose of frightening those who might otherwise feel that creeping inflation is something with which we ought not be seriously concerned. Anyone who followed the discussions a few years ago in Britain, for example, of the need for debtfunding in relation to the effectiveness of the weapons of monetary policy, will recognize how sobering the lessons of experience have been in just this field.18

Sobering, too, have been the lessons of experience to warn those who would dismiss the whole problem by suggesting that, even with creeping inflation pursuing its relentless course, the government will still be able to sell long-term securities—not, indeed, with a fixed rate of interest, but with "indexed" rates of interest. One is aware of the high academic authority that can be cited in "theoretical support" of the device.14 But it is fair to say that no country has applied the experiment of indexing for a longer period and over a wider area than in recent times has Finland. And there, whatever it may have been possible to say in favor of the device as a stopgap measure to moderate inequities and to keep

¹² Italics mine. The quotation is from paragraph 4, "Creeping inflation is not likely to break into a gallop," in section VI of the paper referred to in note 3, above.

13 See, for example, W. M. D[acey], "The Floating Debt Problem," in Lloyds Bank Review, Apr., 1956, pp. 24 ff.; and W. T. C. K[ing], "Should Liquidity Ratios Be Prescribed?" The Banker, Apr., 1956, pp. 186 ff.

14 See the literature cited on pp. 1-2 of David Finch, "Purchasing Power Guarantees for Deferred Payments," in International Monetary Fund Staff Papers, V (1956). Mr. Finch's paper itself is a well-balanced discussion of the issues of principle involved, and presents (in the first of two appendices) a summary of such "Details of Some Recent Applications" of "indexing" as were available when the paper was published. tions" of "indexing" as were available when the paper was published.

some kind of activity going in critical areas while a program of basic stabilization was being worked out, there can be little doubt that the widening applications of the device came to be so mutually stultifying as to raise very serious doubts as to what in fact was being accomplished by the exercise. Certainly there is nothing in the Finnish experience to deny the "greater long-term gain from a policy of stable prices as opposed to the policy of a stable standard for deferred payments," or the proposition that "there can be no question that a single stable standard is preferable when it is obtainable."15 This is another way of saying that, in the end, nothing can take the place of a firm determination to scotch the evil of inflation by doing everything that is humanly possible to prevent it from getting out of hand in the first place. And the determination to do so should be strengthened, not weakened, by what the facts of experience have shown with respect to the compatibility of this goal with the goal of fostering a rate of economic growth which will prove to be the maximum rate of growth precisely because it will be a rate of growth that will be sustainable over longer periods.

ANNEX
INCREASE IN CONSUMER PRICE LEVELS IN REAL PRODUCTION
PER CAPITA IN SELECTED COUNTRIES

	Per Cent Increase in Real Product Per Capita, 1948-56	Average Annual Increase, 1948–56	Per Cent Increase in Real Product Per Capita, 1948–57	Average Annual Increase, 1948–57	Per Cent Increase in Consum- er Price Index, 1948-57	Average Annual Increase, 1948–57
Austria	93.9	11.7	106.1	11.8	124.0	13.8
Germany		9.0	60.0‡	8.6	14.0	1.6
France	47.4	5.9	30.1‡	4.3	76.7	8.5
Italy	32.6*	5.4	41.9‡	6.0	27.9	3.1
Spain	34.5†	4.9	34.5†	4.9	55.7	6.2
Finland		4.5	33.7	3.7	87.5	9.7
Netherlands		3.4	39.3	4.4	46.2	5.1
Belgium	23.0†	3.3	20.4‡	2.9 '	12.6	1.4
United Kingdom	22.7	2.8	25.0	2.8	50.6	5.6
Canada		2.6	18.8	2.1	26.2	2.9
Sweden		2.4	18.6‡	2.7	46.8	5.2
United States		2.3	19.8	2.2	16.7	1.9
Switzerland	16.3†	2.3	30.0	3.3	9.4	1.0
Norway	12.6*	2.1	15.8‡	2.3	51.4	5.7
Denmark	16.1	2.0	21.8	2.4	43.2	4.8
Ireland	8.6*	1.4	12.9‡	1.8	41.8	4.6

^{* 1950} to 1956.

¹⁵ Finch, op. cit., p. 16.

^{† 1948} to 1955. † 1950 to 1957.

Source: United Nations Statistical Yearbook for 1957 and 1958.

DISCUSSION

LESTER V. CHANDLER: The major papers of this session and recent writings on the subject make it increasingly evident that the problem of achieving and maintaining a stable price level is not a single problem but rather a series of problems, and that in trying to arrive at an acceptable solution to any one of these problems we encounter several sources of difficulties. One source of difficulties is, of course, the very multiplicity of our objectives and considerations. If price-level stability were our sole or overriding objective, we might easily agree on acceptable solutions. But we also want maximum output and employment and a rapid rate of economic growth. Some would add still further considerations: avoidance of increased carrying charges on the national debt, holding down interest payments as a share of the national income, maintenance of adequate credit and low interest rates for state and local governments and for new and small businesses, avoidance of direct government controls over prices, wages, and capital markets, avoidance of forced changes in the structures of markets for labor and output, and so on. It should come as no surprise to economists that policies shaped by several objectives may appear quite imperfect when measured against any single objective.

Another difficulty in arriving at "acceptable" solutions arises out of the narrowness of the fluctuations with which we are concerned and out of our definitions of acceptable solutions. We would probably find it relatively easy to agree on solutions if we were concerned only with price increases in excess of 7 or 8 per cent per year and only with rates of unemployment in excess of 7 or 8 per cent of the labor force. But both the economic analysis and value judgments become increasingly difficult as we address ourselves to narrower fluctuations, such as those that have occurred in the U.S. economy since 1951. When the average rate of price increase does not exceed about 3 per cent in any year and when recessions are short and involve decreases of total national output of no more than 5 per cent, developments in different sectors of the economy are likely to be diverse and broad generalizations to become more difficult. And if to be defined as "acceptable" a solution must maintain unemployment at less than 2 per cent of the labor force and price increases at less than 2 per cent per year, we may well have defined away any acceptable solution within the framework of a basically free market system.

The major papers presented here high light the fact that much of the controversy among economists relative to stabilization policies grows out of differences in their economic analysis. Of course there are differences in value judgments, some of which would persist even if we were all in full agreement as to the cost, if any, of each objective in terms of the others. But economists are in wide disagreement as to the costs involved—as to the compatibility of the major objectives with each other and how much more of one can be purchased at how much sacrifice of others.

Dr. Marget has effectively cast doubt on one set of alleged empirical findings: that in Western industrialized countries during the postwar period the rate of increase of real output per capita has been highly correlated with the rate of increase of prices. Some of Mark Leiserson's findings in a recent paper for the Joint Economic Committee lend support to Marget's criticisms of the earlier assertions. (See "A Brief Interpretive Survey of Wage-Price Problems in Europe," Study Paper No. 11 for the Joint Economic Committee, December 11, 1959.)

I believe that we may therefore label as unproven the empirical assertion that the higher the rate of increase of prices, the higher will be the rate of increase of output. But this does not get us far toward settling current controversies; very few have seriously supported such an open-ended proposition. In fact, most of the proponents of a rising price level have advocated only a creeping inflation and have at least implied that a creeping rate would be sufficient to provide a significant stimulus to economic growth. Few indeed have suggested that our growth could be hastened much further by allowing price rises to proceed from a creep to a walk to a sprint.

The other two papers dealing largely with creeping inflation have also made valuable contributions. They should warn us effectively against at least the most primitive dichotomies between demand-pull and cost-push inflation and also impress upon us the difficulties, if not the impossibility, of distinguishing empirically between demand-pull and cost-push elements in any actual situation of creeping inflation. Perhaps the Samuelson-Solow technique of relating rates of price change to rates of unemployment will prove fruitful. These authors are to be commended for the modesty of their claims for both the technique and their quantitative "guesstimates." Several of my concerns about this technique have already been mentioned by them. Yet I must confess serious doubts about the usefulness of this technique and of the quantitative guesstimates for policy-making purposes.

To illustrate my concern, I should like to assume that the government adopts a policy of preventing unemployment from rising above 3 per cent and that this policy comes to be widely known. On the basis of past experience, Samuelson and Solow guesstimate that to hold the unemployment rate as low as 3 per cent would require annual price increases of 4 to 5 per cent. But this pattern of price-change-unemployment-rate relationships was observed in periods when there was no government commitment to maintain such a low level of unemployment, when the recent past included higher unemployment rates and lower rates of price increase, if not actual price declines, and when no one could be sure that another depression was not in the offing, I fear that the very announcement of a government policy to prevent unemployment from falling below some stated low figure, such as 3 per cent, would shift the pricechange-unemployment-rate relationship in such a way that to maintain a 3 per cent unemployment rate would come to require price increases considerably above the 4 to 5 per cent range. To the extent that they felt more assured that unemployment would remain low and that prices would continue to rise, trade-unions would probably demand larger wage increases and employers would be less disposed to resist them. Moreover, the monetary and

fiscal authorities would have less freedom to restrict the price-wage or wage-price spiral or even to create doubts that the spiral would continue. I am not contending that creeping inflation would necessarily develop into a galloping rise of prices, but I would expect some acceleration.

I would also expect the price-change-unemployment-rate relationship to differ significantly in different periods of high employment. For example, in the 1951-53 period when unemployment averaged below 3 per cent there was less upward price pressure than we experienced in the 1956-57 period when unemployment averaged closer to 4 per cent. As Charles Schultze has noted, the latter period was characterized by large shifts in the composition of demand, with big increases in demands for capital goods and much less buoyant demands for housing and consumer durables. In this situation I suspect that more liberal monetary and fiscal policies could not have increased employment and output very much, or could have done so only at the expense of a considerably higher rate of price increases. Given the shift of preferences away from autos and other durables, it seems unlikely that consumers would have used any large part of any increases in their disposable incomes to buy these goods. And it seems likely that a large part of any additional supplies of credit would have gone into the purchase of capital goods, where demandpull inflation was already evident. Only a fraction of it would probably have gone into housing.

In short, when the composition of demand is shifting significantly, more liberal general monetary or fiscal policies may do little to speed the shift of real resources to industries enjoying the largest increases of demand or to maintain real demands for those types of output that are less preferred. And if they do achieve these results, they may do so only at the cost of considerably higher rates of price increase.

It is also well to note, as Samuelson and Solow have done, that they dealt primarily with the unemployment-rate-price-change relationship and said less about the behavior of total output and the rate of economic growth. It seems reasonable to expect that real output will be higher and the rate of growth faster if unemployment is kept at some low level—say below 4 per cent—than they would be if unemployment were much higher, say above 6 or 7 per cent. But it would be dangerous indeed to assume that this relationship will continue to hold as the unemployment rate is reduced from a low level to still lower levels. Even in the short-run, total output may be greater and the rate of growth higher at unemployment rates of 3 or 4 per cent than at unemployment rates of 1 or 2 per cent.

Moreover, it is dangerous to apply short-run analysis to the problem of real growth rates. Presumably our primary interest is in average rates of growth over a considerable period of time, not in the speed of temporary spurts. Those who talk about "sustainable rates of growth" have something useful to contribute. Dr. Marget has pointed to countries that during short periods increased their growth rates by using up their foreign exchange reserves and were then forced to pause or even slide back while they replenished their reserves and adjusted their domestic economies to the reduction of imports. But even ignoring international aspects, a nation may in the short run

achieve an unsustainable rate of growth and thereby build up imbalances which will necessitate readjustments that will give it a lower average rate of growth over time. For example, I think we may take it for granted that the marginal efficiency of investment function will shift widely from time to time. Suppose that at a time when it has shifted to an unusually high level we follow policies designed to squeeze out the last ounce of economic growth. If this leads to a large increase in the rate of real capital formation and/or large increases in the price of capital goods, it could necessitate serious time-consuming readjustments when the marginal efficiency of capital again shifted downward. Moreover, an attempt to maximize the short-run rate of growth in such circumstances may bring such a high rate of price increases that the monetary and fiscal authorities will be impelled to introduce restrictive policies to halt the process. The resulting disappointment of widely held highly inflationary expectations could be quite damaging to employment, output, and growth.

Also, if we are interested in the average rate of growth over the longer run, we should not dismiss the possibility that a prolonged rise of prices may either lower the propensity to save or inhibit the flow of savings into their most productive uses or both. I admit that some have exaggerated this danger, but I am no more favorably impressed by those who try to dismiss the danger by noting that it has not happened here yet. We do not know what would happen here if a high degree of price-level stability ceased to be an important policy objective.

ABBA LERNER: I am sorry I did not understand that I was limited to only one of the papers. I have tried to deal with all three of them and would now find it difficult to disentangle my remarks, so I shall keep to these, even though I will be repeating some of the points already made by the first discussant and will be making it harder for the discussant following me. In the course of reading the papers and, even more, in listening to them, I find myself reverting to an old hobby of providing new definitions of inflation every few years. My latest contribution was to suggest the term "sellers' inflation." But now it seems to me that this still does not put the stress just where it ought to be.

Reynolds' attempt to show that wage-push is not so serious turns out to be more of an indication that it is difficult to diagnose. There is a great deal to his stress on the overemphasis on the power of trade-unions to raise wages, but wages rising as much in nonunionized as in unionized industries may mean either that unions should be blamed for what happens in all industries or that unions should hardly get any blame at all. Yet, however the blame is allocated, the inflation can still be serious.

Reynolds' list of cures is even less comforting. The plug for increasing competition is more virtuous than promising. The holding of conferences to review suggested wage or price increases is not likely to be effective as long as any sanctions are ruled out in advance. We have seen the futility of such emasculated threats in still more important matters in the international situation. Increasing productivity, whatever its other benefits, will not help against in-

flation if wage increases are tied to increases in productivity. A common front of employers against trade-unions may increase their power to resist wage increases less than it weakens their will to resist them (since competitors' wages will rise too). And selective monetary restraint looks too much like giving up the main use of the price mechanism; namely, the use of changes in relative prices for adjusting production to shifts of demand.

Of great interest in Reynolds' paper is the thought that the "new inflation" may be caused neither by excess demand by buyers nor by pressure by sellers, but by profits used to raise wages rather than dividends—a kind of wage-pull, which when emulated by others appears as a wage-push.

Another example of the interpenetration of buyers' inflation and sellers' inflation, referred to by Reynolds and by Samuelson-Solow and currently holding the spotlight, is Charles Schultze's demand-shift analysis. Schultze shows how the macrophenomenon of sellers' inflation could appear even if particular prices could be increased only by excess demand. Price fails to fall in the market from which demand shifts (because of price rigidity downward) but does rise in the market to which demand shifts. No price is pushed up by any seller; yet the price level moves up even though there is no overall excess demand.

While this is of great analytical and aesthetic interest and is especially appealing to those who are bothered by the incompatibility of sellers' inflation with perfect markets, it can hardly explain all the price increases of sellers' inflation. The increases in steel prices and wages, for example, cannot be broken down in this way. They look like wages and prices actually pushed up by sellers in a tacit agreement between labor and management (labor having joined the dinner club mentioned by Adam Smith). The fight between labor and management thus appears something of a mock battle, though it perhaps would be going a little too far to suggest that the lengthy strikes merely reflect a joint preference for a six-month year over a three-day week.

Marget's paper disputes Slichter's interpretation of the European experience as showing that considerable growth is possible with considerable inflation. Marget insists that the data show that considerable growth is possible with relatively little inflation. The data are clearly compatible with both theses, but the relevant issue is not whether different degrees of growth may not be found with different degrees of inflation in different countries, but whether in any country you can produce a greater current output by increasing demand beyond the point where prices begin to rise. Slichter says you can and Marget says you should not. There is no contradiction.

Marget makes out a good case for the view, questioned by Samuelson-Solow, that the higher level of output that involves some inflation cannot be maintained indefinitely. But instead of resting on the argument that a creeping inflation must accelerate if the high output is to be maintained, he weakens his case by resting it on the impossibility of indefinitely enjoying an import balance. An import balance is not a necessary condition for an inflation and may provide only a small part of the additional consumption or investment.

Marget's central position is that if a creeping inflation is "the inescapable

cost of maximizing output," we should not pay it. In an unnecessary attack on the rather ridiculous theory that "so long as any increment in the goods stream is possible, this increment will always be sufficient to match the increment in the stream of money spending" (in which case there could be no excess demand!) he declares that "the essential problem of the monetary authorities" is to see to "the establishment of a level of money spending sufficient to support a sustainable rate of growth, without overflowing into the phenomena of inflation."

But there is a middle ground between increasing money demand as long as any increment in the goods stream is possible, no matter how much prices rise, and preventing any inflation by keeping money demand down no matter how low output falls. One can apply the economic principle of equalizing marginal cost and marginal benefit, indulging in creeping inflation as long as the value of the additional output is greater than the damage from the additional inflation involved. As adjustment is made to the inflation it has to run faster and faster to keep output in the same place. When the damage done by marginal inflation becomes greater than the benefits from the marginal output, we have reached the point where the equalization of marginal social cost with marginal social benefit calls for currency reform. The cycle would then repeat. As long as rising prices and low employment are the only alternatives available, the orgies of inflation and the mornings-after of currency reform and devaluation are just what is prescribed by the sober application of the rational principles of maximization of benefits.

It would, of course, be far better to enjoy full employment and price stability all the time, but a 3 per cent cut in output is much worse than a 3 per cent inflation which can never do more than redistribute a fraction of 3 per cent of the output. A small part of the difference in output would be sufficient to correct the injustices since much of the redistribution will cancel out or will be in desirable directions.

Samuelson's and Solow's paper soberly considers the issue and brings us to the essence of the matter: How much does it cost? No apologies are needed for the curve they draw of the relationship between the movement of wages and the level of employment. The other elements that affect the movement of the wage level must all be closely interrelated with the level of employment; so that bringing them in could only result in minor refinements. The basic question is: How much inflation for how much output or vice versa? Samuelson's and Solow's tentative estimate is that in the United States price stability would cost 7 or 8 per cent unemployment instead of the 2 or 3 per cent that are necessary because of unavoidable frictions. Since this would involve much part-time work, job protection, and the maintenance of overheads, the reduction of output would be considerably more than 5 per cent and of the order of magnitude of 30 to 50 billion dollars. With the modesty proper to the New Welfare Economics, Samuelson and Solow do not say whether this is good or bad.

Most interesting in the Samuelson-Solow paper is the discussion of the difficulties of finding objective evidence of the degree to which an inflation is a sellers' inflation or a buyers' inflation. My own experience with this prob-

lem in Israel, where it was much clearer than here, convinces me that they underestimate rather than overestimate the difficulties. Even the most subtle analyses of lags and gaps will not help. We can tell whether it is a seller or a buyer who has the deciding voice in raising a price only by examining the circumstances of the particular price change; and ultimately, it is not this that makes the crucial difference. Even in an inflation caused by excess demand, the seller may realize the nature of the situation before the buyer does and be the first to suggest the higher price. The crucial difference is whether prices rise in response to market forces of over-all excess demand, or whether prices are being raised by the free will of buyers or sellers who are not constrained by the market and who are administering a price increase (as they might a price decrease). Whether the price administrators are sellers or buyers or some combination of them depends on the nature of the institutions that are determining the prices which economic analysis assumed to be determined by the market.

A market inflation can be cured by eliminating the over-all excess demand. Administered inflation can be cured by replacing the price administrators by a perfect market, by engineering and maintaining a depression severe enough to force the administrators to balance price increases with price reductions, or by subjecting the administrators to regulations that would make them administer prices in response to supply and demand just the way a market would.

We do not seem to be able or willing to do much about the first, we consider the second too expensive, and we tend to confuse the third with price control and to dismiss it (I think wrongly) as politically and administratively unfeasible. So we continue to conform to "Peterson's Law" of secular inflation.

Joseph A. Pechman: Although the Employment Act has not been amended to include price stability as a specific objective of governmental economic policy, inflation has become a matter of great public concern. This is in sharp contrast to the prevailing mood and opinion just five years ago. Then, prices had been stable for more than two years and few people were worried about inflation; some were even talking about a new era of price stability. Now, the situation is just the reverse. The experience of 1956 and 1957—when prices rose at a rate of 3.5 per cent per year—is still fresh in the public mind. In addition, prices have been inching up throughout the past two years, despite the fact that unemployment was never below 5 per cent of the labor force at any time during the period. In these circumstances, nobody believes that inflation has really been licked, and there is widespread expectation that we may be at the threshold of another upward spurt in the price level.

The papers by Professors Samuelson and Solow and by Professor Reynolds deal with a number of important aspects of inflation, but I should like to confine my remarks to their discussion of the "terms of trade" between unemployment and price stability. By this I mean the cost in terms of a higher rate of unemployment of achieving price stability or, alternatively, the cost in terms of higher prices of reducing unemployment to a tolerable level.

Samuelson and Solow are impressed by the inverse relationship between money wage changes and the degree of unemployment which A. W. Phillips seems to have found for the United Kingdom since 1861. Using Rees's data for manufacturing in the United States back to 1889, Samuelson and Solow observe a similar inverse correlation between wage changes and the percentage unemployed for the whole period; but, unlike Phillips' conclusion for the U.K., they detect a small, but significant, upward shift in the relation during the forties and fifties.

A detailed review of the Phillips thesis by Guy Routh appeared in *Economica* after Samuelson and Solow completed their article. Aside from some rather scathing criticisms of the data, Routh demonstrates that Phillips has exaggerated the closeness of the relationship between wage changes and unemployment in the U.K. Professor Reynolds points out that the relationship has never been a close one in the United States either, and it certainly has not been close for the most recent years. Since the end of World War II, average hourly earnings in manufacturing increased as little as 2 per cent, and as much as 6 per cent in years when the unemployment rate was about 5 per cent. Conversely, a 6 per cent increase in earnings occurred when unemployment was as low as 3 per cent and as high as 5 per cent.

Reasoning from their Phillips curve for the American scene in recent years, Samuelson and Solow guess that the cost of price stability in the United States is an unemployment rate of between 5 and 6 per cent; and that the cost of achieving a high enough output to give us no more than 3 per cent unemployment is a price rise of between 4 and 5 per cent per year. While there is a great temptation to assume that some such relationship exists, very few of the observations we have fit this picture. Beginning with 1947, there were five years in which unemployment averaged less than 4 per cent. In two of these years, the implicit price deflator for the private sector of the economy rose much more than 5 per cent; in one year, it rose less than 1 per cent; and in a fourth, it remained unchanged. In the eight years during which unemployment averaged more than 4 per cent, there is also no observable relationship between the unemployment rate and price change.

It is not very difficult, of course, to interpret the price movements during the years immediately following World War II and the first year and a half of the Korean war. Demand obviously played the key role and prices behaved accordingly. The difficulty of interpretation begins in 1952. Starting in that year, the annual percentage changes in the implicit price deflator for private GNP (calculated from fourth quarter to fourth quarter) were as follows: 1.2, 0, 0.7, 1.4, 3.9, 3.0, 1.1 and 1.6. These are puzzling figures, indeed. I am prepared to accept Professor Charles Schultze's sector inflation hypothesis to explain 1956 and 1957. But the remaining years do not fit the Samuelson-Solow version of the Phillips curve for the United States or any other pattern, for that matter. Omitting 1956 and 1957, prices rose at an average rate of 1 per cent per year. There is a suggestion that the two recovery years, 1955 and 1959, show somewhat larger price increases than the immediately preceding recession years. Otherwise, the figures seem to indicate only that there is a long-term upward drift in the price level (again omitting 1956 and 1957).

If these data have any meaning, they suggest two things. First, as Professor Reynolds points out, we ought to know more about the transmission of price and wage movements throughout the economy. This will help us understand sector inflation better and also may suggest ways to cope with it. As of the moment, I agree with Schultze that it would be too costly, in terms of unemployment, to attempt to control sector inflation by depressing aggregate demand. To apply controls on particular industries, either through direct regulation of wages and prices or through variable depreciation rates and other tax devices, would do more harm to the economy, it seems to me, than to allow sector inflation to work itself out in a generally higher level of prices. And, while I have no doctrinaire position against consumer credit controls, I can see no virtue in using them when instability is caused by abrupt changes in investment.

Second, aside from sector inflation, our major problem is to stop a slow updrift in the price indexes, which has averaged 1 per cent per year since 1952. This average increase would not be cause for concern if it were showing no trend. Our inability to correct for changes in quality may, over a period of years, account for a sizable proportion of a 1 per cent annual average increase in the official indexes. But the fact of the matter is that the upward drift in prices seems to be getting larger. The rise in the implicit price deflator was larger in 1958 than in 1954 and also in 1959 than in 1955. I believe Samuelson and Solow are quite right in emphasizing that one of the major causes of inflation may be inflation itself. A creeping inflation may not lead to a galloping inflation, but it can lead to a larger and larger creep which would do nothing to promote growth and will certainly do great harm to important groups in our society.

Under the circumstances, I think it is important to halt the creep now rather than later. But before taking such a drastic step as permanently raising the average level of unemployment, I would like to see the adoption of other more constructive policies which would clearly operate in the direction of stabilizing the average level of prices. Professor Reynolds has some very worth-while suggestions. I would emphasize the following:

- 1. We can hardly fail to build inflation into the system if government continues to set floors to individual prices. The best examples of this unfortunate policy are, of course, farm price supports. But there are others, like tariffs and import quotas and the hoarding of vast supplies of metals and minerals. If we are serious about combating inflation, it is foolish to hold up prices in industries in which productivity is rising rapidly or in which foreign or domestic competition is exercising downward pressure on prices.
- 2. Absolutely nothing has been done in recent years to improve the mobility of labor and to eliminate the pockets of unemployment in depressed areas. Whatever the shape of the Phillips curve for the U.S., greater mobility of labor would surely shift it to the left. It would not be very costly, for example, to improve the U.S. employment services so that workers will be better informed of job opportunities in other parts of the country. Consideration should be given to the possibility of paying a small subsidy to workers who move from one community to another when they accept a job offer through

the employment service, in order to help pay for their moving expenses. It would be extremely helpful if methods could be found to protect workers' pension rights when they move from one job to another. And it should also be possible to amend the social security laws to permit older people to accept work yielding them more than the \$1,200 limit now imposed on their earnings.

- 3. It is time to devise fair and practical procedures for releasing workers who are no longer needed because of technological and other improvements in production techniques. I recognize that this evokes an emotional response from both labor and management, but it is clearly important to break the present impasse. Most of the existing arrangements were adopted through collective bargaining; the government should take steps to encourage labor and management to settle these disputes through the same process. Some recent contracts have provided for a fund to help train and relocate workers displaced by new techniques. This suggests that solutions can be found if the opposing parties agree on the objective and are willing to discuss alternative methods of handling the problem.
- 4. Even though economists and statisticians recognize the limitations of our official price indexes, every wiggle in the indexes is regarded as significant both by the public and policy-makers. It is important to remember that every increase of one point in the Consumer Price Index raises wages significantly, both directly through escalator contracts and indirectly through its effect on collective bargaining. For this reason alone, we should make great efforts to improve the collection of price data. I have already indicated that quality change may account for a significant fraction of the increase in prices in recent years. While I am not sanguine about the possibilities of correcting for quality change, an attempt should be made to assess the importance of this factor. If it turns out to be relatively large, there would be a good case for changing escalator contracts to provide for wage increases only after the price index has risen a certain minimum percentage. If prices are overstated during recessions, as some allege, this bias in our indexes should be removed. The Stigler committee, recently set up by the National Bureau at the request of the Budget Bureau, is examining these and other questions relating to the construction of the government's price indexes. I expect this committee to come up with some constructive suggestions and recommendations along these lines, and it is to be hoped that the price collection agencies will act quickly to make the necessary improvements in their techniques.
- 5. The best defense against inflation is an effective defense against recession. It is discouraging to note that there appears to be much less agreement now about what to do once recession sets in than there was, say, ten years ago. No effort has been made, for example, to correct the demonstrated inadequacies of our unemployment compensation system—a step which would at least strengthen the built-in stabilizers. And the fear of inflation inhibits the use of prompt and effective discretionary policies to halt and reverse a decline in employment and incomes. The result is that the recession is deeper than it would otherwise be. In the subsequent recovery, when profits jump back sharply, average wage increases tend to be larger than the average long-term increase in productivity. Professor Reynolds suggests that something

PROBLEM OF RAISING INCOMES IN LAGGING SECTORS OF THE ECONOMY

LAGGING SECTORS AND REGIONS OF THE AMERICAN ECONOMY

By Harvey S. Perloff Resources for the Future, Inc.

The problem of low incomes has a number of facets: (1) the economically disadvantaged groups in our society; (2) the low-income industries; (3) the low-income regions; and (4) the national costs arising from the underemployment of part of the labor force. Each of these adds something to the total picture and each involves some special policy issues. Also, while these various elements—group, industry, region, and nation—are interrelated, they are significant in themselves. The most severe difficulties arise when all these are compounded, as in the case of isolated agricultural regions with limited resources, worked-out land, small farms, and a majority of Negro farmers.

Certain groups in our society tend to receive much lower incomes than the bulk of the population, no matter what they do or where they live. This is especially true of the Negroes, older persons, physically and mentally handicapped persons, and younger persons with limited education and skill. For example, nonwhite persons receive lower incomes than whites, whether they are urban, rural nonfarm, or farm residents, and no matter what part of the country they live in. The income figures for 1949 provided in the 1950 census show that the median income of rural farm nonwhites in the Southeast was \$486 compared with \$933 for rural farm whites. While the differentials were not as great in nonfarm sections and in other regions, they were substantial. In the case of urban and rural nonfarm persons in the relatively wealthy Middle Atlantic region, for example, the median income of nonwhites was \$1,344 compared to \$2,330 for whites, or 42 per cent less. This represents very low incomes indeed for Negroes at the lower end of the spectrum. A substantial differential between whites and nonwhites remains when age, sex, education, and occupation are taken into account. The various dies that have examined this problem not closely conclude that the white-Negro income differential is largely explained by

¹The data referred to in this paper are largely drawn from a forthcoming Resources for the Future study: Harvey S. Perloff, Edgar S. Dunn, Jr., Eric E. Lampard and Richard F. Muth, Regions, Resources and Economic Growth (Johns Hopkins Press, 1960).

racial discrimination. At the end of 1959, the Labor Department data on unemployment indicated that of the number who had been jobless for more than twenty-six weeks, one out of four was nonwhite, at a time when nonwhites were one out of ten in the labor force as a whole.

A somewhat similar situation obtains with regard to the other economically disadvantaged groups, but this need not be spelled out here. The main point is that the low-income problem of the disadvantaged groups would remain even if the industry and regional aspects of low income were somehow overcome. Thus, even the highest income northern cities have a substantial problem in the inadequate employment opportunities and very low income of Negroes, older persons, and other groups. The low-income problem migrates with the Negro when he leaves Macon County, Georgia, for Washington, D.C., or Chicago.

The problem of the low-income industry is of a different nature and is associated with the structural characteristics of certain economic activities. There is a broad spectrum of average incomes paid out to individuals employed in the various industries of the country. Incomes range from the very low levels of persons in some branches of farming such as cotton and tobacco, in manufacturing groups such as apparel and leather manufacture, and in service groups such as personal service, amusements, and retail trade; going by stages on up to the very high incomes paid out in industries such as petroleum products manufacture, automobiles, pipeline transportation, banking and finance.

Wages and salaries tend to be significantly associated with capital per worker, although other factors also come into play. Thus, the average level of income paid by an industry is associated with the relative amount of skilled labor employed within the industry (or the occupational structure more generally), the relative ages of the persons employed, the relative proportions of males and females, and the like. These factors are interrelated, of course; for example, the less skilled jobs tend to be filled by younger persons, females, and nonwhites. The location of the industry also influences the level of income payments, and this brings us to the question of lagging regions.

The extent to which low incomes are regionally associated is suggested by the data on state per capita personal income. In 1957, for example, with only one exception, all the states with a per capita income above the national average were in the manufacturing belt and the Far West—the most industrialized-urbanized regions of the nation. At the same time, the lowest per capita incomes were—excepting only North Dakota—all in the Southeast. In this region, only the peripheral states, such as Virginia and Florida, had a per capita income as high as \$1,500 at a time when the national average was above \$2,000; Mississippi's per capita income was under \$1,000.

The level of income within an area is clearly associated with its industrial structure; that is, whether low-income industries predominate or not. Thus average per capita income within the states tends to vary inversely with the relative importance of agriculture within the state and also with the relative importance of processing industries (those for which the products of agriculture and mining are important), since both of these sectors are on the low-income paying side. Incomes are positively associated with the relative importance of employment in the fabricating industries and in the business services.

More refined industrial-regional breakdowns show additional significant relationships. Among farmers the only important regional variation in income levels is that between the southern farmer and the farmers of the rest of the nation. Thus, as has long been recognized, while agriculture in general faces some serious problems, it is the southern farmer who presents the most extreme low-income problem.

It is highly significant that both the favorable and the unfavorable elements tend to cluster in spatial or regional terms. As Frank Hanna has shown, in states in which average earnings are above the national average, the average earnings in almost all occupations, as well as in almost all industries, tend to be above the national average for that occupation or industry. Moreover, in states where the average wage and salary earnings of workers are above the national average, workers tend to be concentrated in the higher paying occupations and industries. This is not surprising. Interstate differentials in income of workers in the same industry are related to differences in the marginal productivity of labor and the latter is related to differences in the proportion with which labor is combined with other factors, especially capital. Labor-intensive industries tend to locate where wages are relatively low and all industries, to the extent that their production function permits flexibility with regard to the combination of labor and capital, will tend to use less capital-intensive methods in the lower income areas. Thus the low-income effect can be seen to be self-reinforcing.

But why does not capital flow into the low-wage areas (to take advantage of the lower labor cost) in volume sufficient to equalize wage levels? Some industries are, of course, attracted to such areas; so that the apparel and textile industries, among others, have moved to the Southeast and to communities in the mining regions. There seems to be a limit, however, to the flow of capital that can be attracted by the lower wage levels of certain regions. Every industry has its own special locational preferences based on its particular input and market requirements. A detailed study of industrial location which we have carried out at Resources for the Future shows clearly that for the great majority of industries the location of material input sources and even more the

location of markets tends to exert the dominant locational pull. Also important are such factors as the need for specialized services, requirements of communication and speed of transportation services, and the attractiveness of the living environment. In the language of the industrial location economists, relatively few industries are labororiented. One has only to think of the steel industry or of machine tools or women's high-fashion dresses or the whole host of specialized services that cluster in the great urban centers like New York, Chicago, and Los Angeles to get a mental image of what is involved. As a matter of fact, there is a good bit of evidence to show that market considerations are playing an increasingly important role in our economy. If this is as significant as it seems to be, then the great national-market and regional-market centers might well be the receiving areas for the bulk of American industry, while the more isolated areas might well have difficulty in holding on to the limited industry they already have.

The classical solution for raising wages in the low-wage industries that is, workers leaving the industry to get better-paying jobs elsewhere (reinforced by organized bargaining)—is still the basic solution within those industries and areas characterized by a high degree of factor mobility. The problem arises when either an industry or an area is characterized by inadequate mobility over a long period of time. In the instances which present the most difficult problem, inadequate industry and regional mobility reinforce each other, as is the case of a large section of farming in the Southeast. Here an understanding of the difference between immobility and inadequate mobility becomes important. There has been a tremendous amount of movement out of agriculture in the poorer areas of the country, but it simply has not been enough to overcome the low-income problem. That such movement helps with relation to income is suggested by several facts; for example, between 1939 and 1954, the states that had absolute decreases in population—such as Oklahoma, Arkansas, and Mississippi had some of the greatest relative increases in per capita income in the nation for the period. Our analysis suggests, in fact, that over recent decades perhaps the most important single factor pulling the per capita income of the Southeast upward was the decline in agricultural employment. But the movement out of agriculture has not been enough to raise income levels in these areas close to the national average.

One can conjecture that the amount of out-migration required to bring wages and income within a given area close to national averages would depend on many factors, and that important among them would be: (1) the rate of natural increase and of in-migration, if any; (2) the ratio of labor force to population and the number of new entrants into the labor force; (3) the existing amount of unemployment and under-

employment; and (4) the rate at which new job opportunities are being created. All of this can add up to the requirement for a tremendous amount of out-migration from disadvantaged areas.

Reference to recent migration is instructive. Thus between 1940 and 1950, the rate of movement out of agriculture ran as high as 90 per cent in some southeastern states. For example, some 465,000 persons left agriculture in Alabama. This amounted to a movement out of farming during the decade of 93.4 per cent. However, during the decade Alabama had a rural farm replacement rate of 203 per cent. (By comparison, New York State had a replacement rate of 115 and California of 122 per cent.) Altogether, then, farm employment in Alabama was reduced by a total of only some 127,000 persons—a farm employment decrease of 25 per cent.

Translated into geographic terms, a predominately agricultural region may continue to be subject to underemployment and limited improvements in income levels, in the face of substantial out-migration, as long as birth rates continue relatively high. Moreover, out-migration from farm areas, even if involving reductions in total numbers, cannot be expected by itself necessarily to increase levels of living within such areas. The out-migration would normally have to be accompanied by a number of changes—such as the creation of larger farms, a higher ratio of capital inputs, and a more efficient use of labor—which add up to a higher productivity per farm worker. Without this, the rate of improvement in income levels can be painfully slow.

The experience of nonfarm depressed areas, such as certain of the coal mining areas of Pennsylvania, Kentucky, West Virginia, and Illinois and the textile mill communities in New England, has been similar to that of the southern farm regions with regard to the persistence of low incomes in the face of quite substantial out-migration. Here, too, while large numbers of workers have left such areas in the face of limited employment opportunities, many others have stayed on over the years in spite of unemployment or employment at very low wages in industries such as apparel or in assembly operations, and the replacement rates, in some instances, have continued to be very high.

This brief account hardly touches the surface of the problem, but it is suggestive to see it in broad outline. And here I would like to refer to the fourth facet of the problem I mentioned at the beginning: The cost to the nation of having a significant share of its labor force underemployed. (Secular underemployment is, of course, the other side of the coin of low incomes.) In simple terms, we are not producing as a nation what we are capable of producing.

The national rate of economic growth has lately become a lively issue in the face of the Soviet economic advances, but of course the issue of optimum national production has relevance aside from the cold war situation. The United States has not yet seriously come to grips with the question of nationwide secular full employment, including the removal of pockets of unemployment and underemployment.

Actually, at the present time there are some serious efforts to improve employment opportunities and income levels. For example, there are over 14,000 agencies concerned with "area development" in one way or another; also there are a number of federal and state programs concerned with depressed regions and certain of the disadvantaged groups. While some very effective things have been done, and are being done, taken as a whole, the results thus far have not been very impressive. Possibly the difficulty is one of inadequate scale and impact. The few figures on population replacement given earlier suggest how in rural areas a limited effort can be literally drowned in the counterinfluence of high birth rates. We are in a situation with regard to the problem of low incomes and secular underemployment similar to the one that characterized countercycle efforts in the early thirties—too little, disorganized, and often misdirected. As we become more successful in maintaining general prosperity nationwide, the employment and income problem increasingly reduces to the lagging sectors.

It is evident that the problem of sectors of low incomes and secular underemployment will not readily yield to solution. The forces at work are extremely complex, including physical, social, cultural, political, and psychological factors as well as economic ones. Also, there are all sorts of booby traps involved. Activities that prevent or delay needed adjustments on the part of individuals, industries, or regions can of course do more harm than good. The mislocation of industries by way of subsidies would fall into this category, as would efforts that delay the migration of workers from areas with little employment opportunities. Industries, to remain competitive, must generally be well located with regard to all their inputs as well as with regard to markets, and it is obvious that not all areas with problems of surplus labor are capable of economically absorbing new industries. One can go further. An essential ingredient of a sound program of full employment would be the encouragement of location of new industry and of work force in the most advantageous locations, weighing not only input and output factors over the foreseeable future, but also the social and cultural opportunities likely to be offered to people at every stage of their life, but particularly when they are young. A good many of the presently depressed areas are by no stretch of the imagination favorable environments for the growth of our future citizens. In general, it is clear that the problem of low incomes is directly tied to factor immobilities; to add to the immobilities, in the name of doing something about low incomes, would hardly make good sense.

It is very difficult indeed for the people of a local community to be able to launch a full-fledged program which can equate labor force and relative employment opportunities, when this involves sizable outmigration. However, there are clearly very many important steps that a local community could—and should—take within the framework of a well-developed national program. But the latter is not yet in being; so that today local efforts are, with very few exceptions, limited and basically ineffectual. What this suggests is that there is need for the adoption by the national government of a policy of fostering secular full employment in the lagging sectors as well as in over-all national terms. This could readily come under the rubric of the Full Employment Act of 1946, but there is much to be said for a more conscious and dramatic broadening of the federal full employment program to include a strong and continuous effort to remove pockets of underemployment and getting at the more important personal, industrial, and regional factors. In addition to the broadening of the federal effort, it would take a more concerted effort on the part of all the other levels of government, working with private individuals and groups, to make substantial progress with such a persistent and difficult problem.

The details of a program of nationwide secular full employment would have to be worked out, of course, year by year through study and planning, in the same way that our stabilization program is worked out through the continuous work of the Council of Economic Advisers, the Treasury, the Federal Reserve Board, and the other agencies and groups. However, in the absence of this type of study and planning, one can draw on our limited knowledge and experience to point to some measures that would seem to be needed and appropriate.

I would put at the top of the list an intensive effort to improve education in the depressed areas, to prepare young persons for a lifetime of skilled, productive work, Compared to other potential governmental measures that have been proposed, public investment in education promises the greatest relative returns. This might include federal and state funds specifically provided for the low-income areas—with both total expenditure per pupil and the nonlocal share increasing in inverse ratio to the average level of income in the area. Such an effort might well focus on the establishment of quite large consolidated schools, bringing in students over a wide area, staffed by well-paid teachers, and providing far better than average general and vocational education. A highly developed system of vocational guidance would be attached to such consolidated schools. I would take this to be the best and most effective measure to help wipe out underemployment. Educated, skilled persons can be counted on to seek out good employment and income opportunities and, equally important, situations favorable to continued development of the individual. It would be highly desirable if such a

special educational effort extended to the low-income sections of our cities.

Such an educational effort might well be coupled with the provision of federal and state loan and grant funds in depressed agricultural areas to encourage the enlargement and improvement of farms and to provide special aids for those selling their farms and moving to areas of greater income-earning opportunities.

In some regions, the foundation for higher income economic activities can be broadened and strengthened through the intensive development of underutilized natural resources, such as forestry, water, and recreation (or "amenity") resources, where such development promises to attract new industries and service activities.

High-caliber regional study-and-planning agencies are needed within the various metropolitan communities and rural economic regions to probe continuously the problems and the consequences of economic and other changes under way and projected and to point the direction for sensible programs to cope with such problems and consequences. Attention needs to be focused, not only on area-wide problems and programs, but also on the groups with special economic problems, such as the nonwhites and the aged.

Every low-income section of the country has its own special set of problems and quite different potentialities for economic growth and improvement. Some have natural resources that have yet to be fully tapped; some have locational advantages for attracting industries; others, however, have to face up to their very limited potentialities for economic expansion and to the urgent need for a high rate of out-migration. In many instances, significantly higher income levels can be achieved only by combining a really effective economic development program with a substantial amount of out-migration. The experience of Puerto Rico is suggestive in this regard. It has taken a brilliantly conceived and executed economic development program—coupled with a rate of out-migration over the past decade high enough to keep the island's population at almost a stationary level—to permit Puerto Rico to realize a substantial and continuous increase in its level of per capita income. And Puerto Rico has not hesitated to help the migrants. Such a twofold effort is called for in a number of regions in the United States and, to be sensibly focused, requires careful planning.

Such study-and-planning efforts could be most effective if they were backed, as suggested earlier, by federal study, plans, and programs which set up a framework for the state, regional, and local efforts. Low incomes deeply involve all levels of our economy and society. The national scope of the problem requires recognition by the federal government if policy at any level is to be effective in ameliorating it.

THE EVOLVING LOW-INCOME PROBLEMS IN AGRICULTURE

By Frank J. Welch University of Kentucky

The challenge of raising incomes in lagging sectors of the American farm economy is an old one that has pricked the conscience and challenged the ingenuity of the economic and political leadership of the nation for the past several decades. The industrial revolution brought slums with all their concomitant social and economic ills to the industrial centers. These have been improved significantly through various types of legislation, social welfare programs, and the general economic improvement of the lot of industrial workers.

The coming of the technological and scientific revolution to American agriculture has left certain fairly clearly delineated geographical areas as chronically depressed low-income sectors of our national economy. Despite all that has been written and said about the plight of the low-income group in American agriculture, it is still difficult for many people to realize that approximately a million and a half farm families have annual net cash incomes of less than \$1,000 and that over two million farm families live with net cash family incomes from all sources amounting to less than \$2,000.1

Location and Magnitude

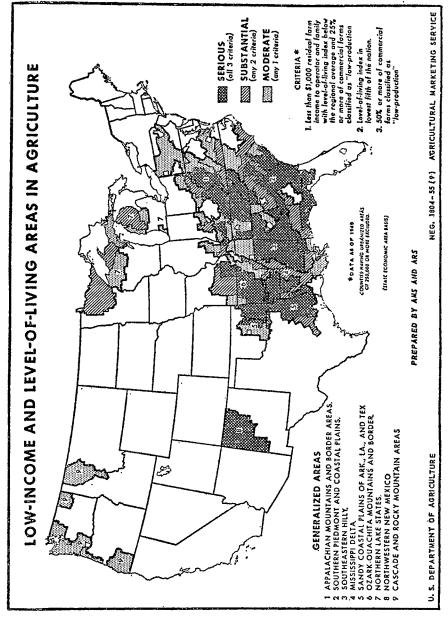
Dr. Perloff has already indicated the lagging major sectors of our economy, but a generalization here regarding the loci and magnitude of the low-farm-income problem might be helpful. By and large, the intensive concentration of small, low-income farms is in the southeastern part of the United States, with less intensity in the cutover areas of the Great Lakes region and in a part of New Mexico and the Northwest. (See Chart I.)

To be more specific, there are nearly a thousand counties in the United States, concentrated primarily in the South, where more than half the farmers are dependent mainly on the income from small, poorly paying farms. Forty-one per cent of the farm families in the South have a net income of less than \$1,000 from all sources, compared with 11 per cent in the North and about 15 per cent in the West.²

Development of Agriculture's Human Resources, A Report on Problems of Low Income Farmers (USDA, G.P.O., 1955), p. 1.

Farms and Farm People, A Special Cooperative Report (Bur. of the Census and Coop. Agencies, G.P.O., June, 1953), p. 26.





Characteristics

A logical question is this: Why have certain sections or subareas of our country failed to keep pace with economic evolution and progress? It is not an easy question to answer. The web of causation is so intricate and runs off in so many directions that one is hard put to say anything intelligent about it. It is at once a problem of education, a problem of political organization, a problem of culture and social interaction of people, a problem of motivations, a problem of science and technology and their adaptability to local conditions, and also a problem of low quality and limited resources in relation to population, as well as philosophies and values.

Undoubtedly, as indicated, two of the dominant characteristics of the low-income agricultural areas of the country are the high man-land ratios and the imbalance between agriculture and industry. This situation has evolved slowly over many decades—decades in which science and technology have come to the larger, commercial-type farms and industrial development has taken place at a very rapid pace outside these depressed areas.

Most economists now disclaim the idea that poor land always breeds poverty.3 With this I agree; yet the types of economic adjustment occasioned by technological advances are not the same in all sectors of agriculture, and the material resource base in various ways affects both the nature and magnitude of the adjustments required.

Most of the technologies developed in recent decades have been primarily geared to the needs of the more prosperous, topographically level areas of the country, where capital resources are relatively plentiful. For good reasons, manufacturers gear their research programs to the areas adapted to machine operation.

Smallness of unit is a major key to an understanding of the lowincome areas. In such areas, characteristically, the farm is small in size and value, with total acreage below 100 and cropland ranging from 5 or 6 acres up to 30.4 The produce of the limited land is low in both quantity and quality as a result of inefficiencies in enterprise patterns and managerial practices.

I think it would be wrong, however, to assume that the answer to the problem is that of simply combining enough parcels of land to make effective use of combines, airplane sprayers, corn and cotton pickers, and one-man hay balers, and bringing to bear the managerial skills used on midwestern farms. Rolling topography in much of our low-income

⁸ T. W. Schultz, "A Framework for Land Economics, the Long View," J. of Farm Econ., 1951, pp. 204-13.

Computed from data appearing in U.S. Census of Agriculture, 1954.

areas and the parcels of good soil so erratically dispersed make it physically impractical to combine adjacent tracts of land into operating units so as to take full advantage of the science and technology available. Thus much of the land must be put to uses not requiring large units, or it must revert to a lower order use, such as extensive grazing or forestry. This is not to say, however, that a key to substantial economic improvement does not lie in easing the pressure of population on these resources.

Relatively low educational levels appear to be a common thread running through almost all facets of the low-income problem. Recent studies have shown that people's aspirations and horizons are conditioned by their educational opportunities and the standards of living to which they have become accustomed. Those two factors influence the rapidity with which people take advantage of both farm and off-farm opportunities. These same studies suggest that improved education presents the most promising prospect of breaking out of this vicious cycle of poverty and the reinforcing "psychology of poverty" which it brings about.⁵

Also we could enumerate lack of capital or the control of capital from outside these areas, slowly developing transportation services, a lack of local market outlets for specialty crop products, and institutional and public service handicaps. And, as Schultz has so well stated in formulating his retardation hypothesis, the factor markets appear to work less well as we work outward from the main urban industrial matrices.⁶

Population Dynamics of Low-Income Areas

Even though there has been heavy migration from the small-farm, low-income rural areas, high net human reproduction, special difficulties in labor mobility, and lack of adequate off-farm job opportunities have tended to perpetuate and accentuate the low-income situation within these areas.

In the field of labor mobility, the money costs of moving to a new location, sometimes hundreds of miles distant, would, in view of the low-income status of potential migrants, serve in itself as something of a deterrent. Propertyless people, particularly those with families and no assurance of getting a job, are not very satisfactory loan risks, particularly when they will be located several hundred miles from the lender.

In addition, the means by which knowledge of nonfarm opportunities is disseminated rarely reaches the more remote rural areas. News-

⁵R. B. Hughes, Jr., "Population Adjustments and Economics Status of Southern Farmers" (mimeograph, Univ. of Tennessee, Dept. of Agric. Econ., 1956).

⁶T. W. Schultz, "Poverty Within Agriculture," J.P.E., Feb., 1953.

papers—an important source of employment information—cover a limited radius with any degree of completeness, and the private employment agencies ordinarily are set up mainly to serve laborers who are already located in the urban area.

Even the public employment services have not been geared to the needs of this vast reservoir of underemployed people. Through their clearance and information exchange procedures it is possible to channel information from one major employment center to another if existing local urban labor supplies are not adequate to fill vacancies; but there is little effective contact with the potentially large labor pool within these low-income areas with reference to existing vocational and technical skills and the means of recruiting this labor.

The Farm Placement Service has an effective system of scheduling the movement of migratory farm labor from one farming area to another so that supplies of labor are available at appropriate times and in proper amounts. For example, contracts and arrangements can be and are made between New England farmers and labor contractors in Belle Glade, Florida, But the underemployed farmer in an Appalachian county has no way other than some chance contact with relatives or friends in an urban center to learn of employment opportunities as close as Indianapolis, Dayton, or perhaps even Cincinnati.

However, even if these people had complete information and could finance the cost of moving, there are still other deeper problems which run in several directions. For example, evidence has accumulated over the past decade or so that people from these areas who do find employment outside the area tend to enter the urban labor force at the bottom rungs of the wage ladder. For rural people, employment in a large urban community distant from their home community often involves giving up many of their customary forms of social relationships and recreation, and also means assuming the role of a cultural minority group, with all that this entails. These problems of integrating into an urbanindustrial complex tend to be associated with short job tenure. Employers for this reason are reluctant to employ them in jobs where substantial in-plant training investments are required. In addition, of course, the relatively low average educational attainment found in most low-income areas puts workers at a competitive disadvantage because they lack basic academic skills necessary to the rapid learning of more specific vocational skills.8 At the present time relatively too few opportunities are provided in rural areas for acquiring nonfarm vocational training.

A.E.R., 1952, pp 296-314.

⁷ Eldon D. Smith, "Nonfarm Employment Information for Rural People," J. of Farm Econ., 1956, pp. 279-304.

8 D. Gale Johnson, "Comparability of Labor Capacities of Farm and Nonfarm Labor,"

On the other hand, there is evidence that problems of adjustments by rural migrants into urban situations may be growing somewhat less acute. In a recently completed study it was found that social adjustment, particularly among the young, to the industrial environment is becoming relatively easier. The rate of migration from depressed rural areas has been so rapid in the past two decades that many rural people now have friends and relatives living in industrial centers. This makes for greater ease of adjustment when the young folks themselves migrate to the industrial centers.

Industrial Capital Mobility

Actually some of the factors which deter labor mobility out of the rural low-income areas tend, along with other institutional and locational factors, also to deter the flow of capital and industrial development into these areas. As a usual thing, industry accumulates where it is already developed. Some dispersal to small communities does occur, but only intermittently and in spotted ways. 10 The promotion of local industry within these areas wherever conditions are favorable is a worthy goal and may eventually have more results than can now be predicted.

The Tennessee Valley Authority recently located its new steam plant near the mouth of a mine in Muhlenberg County, Kentucky, and the resultant supply of electric energy may encourage additional industrial development within the area. It does not seem likely, however, that local industries can become so widespread as to relieve completely the present population congestion in areas where agricultural, low-income families are highly concentrated.

Public Programs and the Low-Income Problem

Having sketched briefly some of the characteristics of agricultural areas of predominantly low incomes and the causes. I now turn attention briefly to the public programs bearing on the low-income problem in agriculture. Some of the programs of government in use for many years have contributed little or nothing to the solution of the low-income farm problem. Price supports and production controls have not aided the farmer who has little, if anything, to sell.11 In like manner, the small farmer with no assets and a record of low, inefficient production is a poor credit risk. Most of the federal government's programs of extending

⁹ Unpublished study at the Kentucky Agricultural Experiment Station by James S. Brown, Agnes Dinsmore, Joe L. Mobley, and Ralph J. Ramsey.

¹⁰ V. W. Ruttan, "The Potential for Rural Industrialization and Local Economic Development" in Agricultural Adjustment Problems in a Growing Economy, E. O. Heady, ed. (Iowa State Col. Press, 1956).

¹¹ See Report prepared for the Joint Committee on the Economic Report by W. W. Wilcox and W. C. Hendrix, Under-Employment of Rural Families (G.P.O., 1951), p. 45.

production, intermediate and long-term credit to agriculture through the Farm Credit Administration are out of reach of low-income farmers. The sole exception is in the loan programs of the Farmers Home Administration.

Credit Programs for Low-Income Farmers

The Farmers Home Administration, in its present form, represents an official recognition that the capital problems of the low-income farmer with scanty collateral are not the same as those of larger, commercial farms. The earlier emphasis on small "semisubsistence" units has been dropped. Loans cannot now be made for purchase of units too small for labor efficiency, but the worth-while features of close supervision so that loans can be made with little collateral have been retained. Loans can now be made for farm enlargement up to a limit of a "family sized" unit and for non-real-estate capital. The program now provides genuine encouragement for the upgrading of management skill and the development of economically efficient farm units. However, as with other agricultural programs, it provides no way of enlarging off-farm employment opportunities or in other ways expediting improved aggregate labor-land resource ratios.

Regional Development Programs

The Tennessee Valley Authority came into existence in 1933 and is probably the first comprehensive regional development program of its kind anywhere. Using as its primary basis the water and power resources of the Valley and the improvement in the technology of fertilizer production and the most effective utilization of these fertilizers, it was designed to be a multipurpose program to develop and more effectively utilize the total resources of a low-income area.

Included in its domain of responsibility were flood control of the Tennessee River and its tributaries, navigation from the confluence of the Tennessee, Ohio, and Mississippi Rivers over a distance of some 650 miles to Knoxville, Tennessee, electric power development within the region, agricultural rehabilitation through farm test demonstration programs and reforestation, health programs, research, and assistance to local and state governments.

No doubt TVA, through the development of power, navigation, and other facets of its program, has served to attract industrial capital to the Valley in the last two and a half decades. This has created employment opportunities, expanded the tax base, and provided additional market outlets for farm products. An excellent forestry program is just now beginning to pay off in terms of industrial employment in large wood utilization plants now located or moving into the area and in im-

proved returns from formerly leached, eroded, low-yielding cropland.

Perhaps its greatest contribution has been that of providing electric power to rural areas in the region. With this power has come improved communication through radio, television, and other changes that have cut away at some of the basic social roots of the low-income problem.

While TVA has encouraged industrial development, expansion has not been rapid enough to absorb all underemployed rural workers. 12 Despite the progress that has been made, many portions of the Valley still must be classified as low-income agricultural areas.

The Land-Grant Colleges

The land-grant colleges, of course, have been concerned about and have worked on various facets of the low-income problem through the years. Institutional barriers, however, of various kinds, have seriously handicapped their attempts to deal effectively with the multitudinous problems. Research results have been available to operators of all farms, large or small, but some of these results cannot be applied effectively on small, uneconomic units. The lack of resources and manpower to work more intensively with the disadvantaged groups has elicited criticisms that have not always been fair.

The combined federal and state appropriations for agricultural research for fiscal 1957-58 in the eleven major small-farm, low-income states was only about 40 per cent on a per farm basis of that of the remainder of the United States.¹³ The comparable figure for the Cooperative Extension Service in fiscal 1959-60 is about 70 per cent.¹⁴ These differences are due largely to smaller state appropriations related to ability to pay.

Area Development Programs

A few years ago, area development programs were undertaken which attempted the total development of resources in a few local areas. These were voluntary efforts developed by local leadership within the respective areas. Enlightened self-interest was the catalyst which brought businessmen and other city folk into a program shared with farmers and small-town business and professional men into programs sparked and strongly supported by outstanding local newspaper leadership. The

¹² Eldon D. Smith, "Urban Employment for Rural People: The Problems and Possibilities of Long Distance Migration," paper delivered at meetings of the Asso. of Southern Agric. Workers, Louisville, Ky., Feb., 1955.

¹³ From table entitled, Summary by States of Obligations of the Experiment Stations for the Year Ended June 30, 1958 (Office of Experiment Station, USDA and U.S. Census of Agriculture, 1934). Low-income states include: Ky., W.Va., N.C., S.C., Ga., Tenn., Ala., Wise La and Ark Miss., La., and Ark.

¹⁴ From U.S. Department of Agriculture Federal Extension Service, Sources of Funds Allotted for Cooperative Extension Work in the States and Puerto Rico for the Fiscal Year Ending June 30, 1950, and 1954 Census of Agriculture.

Asheville, North Carolina, organization and one at Tupelo, Mississippi, are perhaps the most outstanding examples. The successes achieved by these programs attracted the attention of leaders throughout the nation, and led to the basic idea of the present Rural Development Program.

Rural Development Program

In 1955 the present national administration initiated the Rural Development Program, specifically to serve the needs of low-income farm areas. The initial financial support for the program was nominal and continues to be so in terms of the scope of the problem, with a current appropriation of about 21/2 million dollars. 15 This modest appropriation, however, is a reflection of a philosophical approach rather than an indication of lack of interest.16 This program, under the able leadership of True Morse, Under Secretary of Agriculture, stresses the co-operation and effort of local people more than it does the use of government money.

The program follows, in important measure, the organization and pattern of activity of the Area Programs previously mentioned. It leans heavily on enlightened self-interest on the part of town and country groups and more effective co-ordinated utilization of existing local, state, and national agencies and organizations.

State-wide rural development committees have been set up in the various states with leaders in agriculture, industry, and the professions being represented. So-called "pilot" counties and/or trade areas have been selected in the participating states.

Fruits of the program to date include both a recognition of the more important roots of the problem and in many areas concrete results in the form of improved farm income, more industrial jobs, increased recreational attractions and expanded tourist facilities, improved educational, health, transportation and other institutional services. As Mr. Morse points out, "it is amazing what can and does happen in rural development areas when leaders get together and (1) take a searching look at the potentials of their area; (2) let their traditional American ingenuity express itself; and then (3) rally the people to get behind the agreed upon projects." However, it is generally recognized that some basic changes in terms of relation of people to resources, significant improvement of educational services, off-farm job opportunities, improved institutional services, and the strengthening of motivations will require

¹³ Appropriations for 1959—Hearings before the Subcommittee of the Committee on Appropriations—U.S. Senate on HR 11767 (G.P.O., 1958), p. 673.

¹⁶ Testimony by Under Secretary of Agriculture, True D. Morse, Hearings on Area Redevelopment, Subcom. on Banking and Currency. U.S. Senate, 85th Cong., pp. 358-77.

¹⁷ True D. Morse, The New Rural America, Comments before 8th Annual Area Development Workshop, Phoenix, Ariz., Oct. 21, 1951.

more than local resources. It will not only require utilization of all the resources in the low-income areas but will also require assistance and programs from the outside. This fact must be squarely faced.

Perhaps the greatest potential contribution of the program will be the clearer understanding of basic needs, characteristics and gaps in present national, state, and local policies relating to the low-income problems.

A Look at the Future

As we look to the future, it is important to recognize that the problems of areas with predominantly low incomes are unique. There are some low-income farm families in most agricultural areas that are otherwise generally prosperous, and in these areas the problem is much easier to cope with. In predominantly commercial-type farming areas, the problems of low-income minorities can be more easily dealt with because of more adequate resources and institutional services. There of course will always be the aged and the otherwise handicapped in all areas that can be reached through social security and welfare programs.

Many of the programs and efforts mentioned in this paper are contributing to the improvement of conditions in the low-income areas, but a most important unfulfilled need is that of more adequate and appropriate educational opportunities. The vicious circle in which poverty tends to feed upon itself can be broken only through education and other institutional changes that provide more nearly equal perspective and opportunity for all.

Contrary to traditional assumptions, local communities often cannot provide adequate educational opportunities for their people. In low-income areas there is a high ratio of school-age children to working-age adults. For the United States as a whole, children under fifteen years of age constitute about 27 per cent of the total population, but in one segment of the low-income agricultural area, children under fifteen years of age constitute from 35 to 45 per cent of the total population.¹⁹

Our present economy is such that wealth, and therefore taxpaying ability, tends to be drawn from wide areas and concentrated in highly industrialized centers which sell their products all over the country. The wider areas contribute directly to the concentration of wealth in the industrialized centers. The labor force for the industrial centers also tends to be drawn from lower income areas, all over the country, where industry is less well developed. These workers generally migrate to the industrial centers after their schooling is over, and it is therefore gen-

¹⁸ V. W. Ruttan and J. K. McDermott, Farm Policy Forum, Summer, 1958, pp. 25-32. ¹⁰ For other comments on the characteristics of a representative area of Appalachian agriculture see my testimony before the Subcommittee on Low Income Families, Jt. Com. on the Econ. Report, 1st Sess., 84th Cong., Nov. 21, 1955.

erally the low-income community that has paid for the education of a labor force that makes its economic contribution to the industrial community. There are sound economic reasons, therefore, for tapping the tax resources of the nation to support educational and other institutional services in areas which do not have adequate tax resources to support those services themselves.

Effects of low farm income directly affecting millions of people are not merely local in character. Apart from the impact of these low incomes on purchasing power and their social implications in a democratic society, the high birth rates within these areas inevitably mean that many of the youth who grow up and receive their schooling in these areas spend most of their adult lives in industrial areas in other states.

Karl Shoemaker, of the Federal Extension Service, estimated recently that, for the nation as a whole, of the rural male children who become twenty years of age during the period 1954 to 1965 only one in ten can expect to become a commercial farm operator having a gross income of \$5,000 or above.²⁰

If we consider the much smaller number of \$5,000 income farms in the areas under consideration, the higher birth rates, and the age distribution of the population, it is apparent that perhaps less than 3 per cent of the male youths in depressed rural areas can expect to find successful farm opportunities.

The foregoing estimate emphasizes the importance of education, including industrial vocational skills and social adaptability for a modern urban industrial environment. This also suggests a shift of emphasis in the 4-H and Vocational Agriculture programs. Total resource and industrial development programs and ways to facilitate the out-migration of those who cannot find adjustment opportunities locally are also needed.

Much additional research on the problems of these areas needs to be done. Since total agricultural research and adult educational needs are great and public funds for these purposes are limited, there is a tendency for funds to flow towards problems associated with commercial agriculture. There is pressing need to expand significantly the rural development programs, including earmarked research funds for the guidance of these programs.

Any approach to the problem is unrealistic if based upon the assumption that economic progress in any area is only a matter of local concern and responsibility. In our complex modern industrial civilization, the various parts and areas are so closely interdependent that what affects

²⁰ Karl Shoemaker, "Opportunities and Limitations for Employment of Farm People Within and Outside of Farming." Unpublished paper prepared for a seminar on Agricultural Resource Adjustments organized by Div. of Agric. Econ. Program, FES, USDA, in 1958.

seriously the well-being of one affects all of us and is, in varying degrees, the responsibility of all.

It cannot be emphasized too strongly that in an agricultural area where incomes are predominantly low, the effects are felt very keenly in the whole range of institutions, organizations, and services within the area. It is precisely for this reason that it has been difficult for these areas, once they have become economically disadvantaged, to again catch up.

Today the millions of low-income families on small farms in America are probably the most neglected in terms of policy and programs of any comparable group in our society. The extent and plight of this large group of our population need to be better understood by people generally, and our policy and programs pertaining to economic development of the whole population need to be geared more realistically to needs and possibilities. We have the necessary leadership, both local and national, and the needed resources to attack fruitfully the many facets of the complex problems within these areas. Let us hope that we get along with getting the job done.

LOW INCOME IN URBAN AREAS

By Eleanor M. Snyder* Franklin D. Roosevelt Foundation

Low-income families and individuals in urban areas today are at the bottom of the income scale as a result, in a vast number of cases, of situations over which they possess no direct control and for which they are not personally responsible.

In a money economy such as ours, the source of most urban income is earnings from employment. Those in the population with the lowest incomes either have limited earnings, or none at all. It can be said, then, that unemployment, underemployment, and inability to work create low-income situations. An explanation of the continuing existence of poverty in the midst of plenty must therefore take account of labor force status and level of earnings of those responsible for the support of others and of those responsible for only their own maintenance.

Economic, social, and personal factors account for the fact that the income of a significant portion of the urban population is low, in absolute as well as relative terms. Economic factors are environmental in origin and affect individual workers and families impersonally, in terms of unemployment and underemployment. We all know how they arise. Economic recessions, technological changes in productive processes, industrial disputes, seasonal demand for labor, creation of labor surplus areas as a result of net out-migration of industry from particular communities—all are contributing causal factors. Social causes include discrimination in employment because of race, color, sex, and religious belief and, among families, loss of the earnings of the head of the family because of his death or absence from the family group. Personal causes of low incomes are restrictions on employability and earning power resulting from illness, physical and mental disabilities, and other handicaps arising from age, limited innate ability, limitations in work skills because of inadequate education and training, and personal failures of the individual. All of these factors, of course, are not found in isolation. Among individual families and persons, there is likely to be a combination of two or more situations that intensify their low-income problems and make them more difficult to overcome.

Regardless of cause, we know that the low-income population in urban areas is substantial. We need not here become involved in de-

^{*}The data presented herein will be included in a forthcoming report to be published by the Franklin_D. Roosevelt Foundation.

fining and measuring the size of this group. It is necessary only to know that it is sufficiently large to warrant concern. The Census Bureau estimates that in 1957, 11 per cent of urban families had money incomes below \$2,000 and 19 per cent below \$3,000. These estimates, of course, are subject to some error. The limitations of income-size distributions obtained from field surveys are well known, as is the argument that they overestimate the size of the group at the lower end of the distribution. On the other hand, the figures just cited do not take account of differences in income needs of families of varying sizes. At today's price levels, an income of \$3,000 provides a skeletal standard of living for the larger families. I think that most of us would agree that today the average family requires more than \$3,000, and single persons more than \$2,000, to maintain an adequate level of self-support. It appears that at least 15 per cent of the total population have incomes below public assistance standards prevailing in New York, my home state. A corresponding estimate for only the urban population may be slightly lower. In any case, about 6.5 million persons in the United States, most of whom resided in urban areas, received public assistance last year and these persons, of course, constitute only a fraction of the total lowincome population. For New York State, it is estimated that the persons actually on relief rolls in 1957 represented only one-fourth of all those with incomes below public assistance budgetary standards. There is no doubt that the size of the total urban population with low incomes is large enough to merit our attention.

In this country we have succeeded in increasing, in real terms, the size of upper-income groups more rapidly than we have reduced the number with the very lowest incomes—this despite the creation and gradual expansion of various income maintenance programs of government during the past twenty-five years. But why are we, as economists, concerned with this result? Jacob Viner once raised a question as to how economic progress should best be measured in countries with a continuously large low-income population despite steady increases in aggregate and per capita income and production. These meetings have allocated a large measure of attention to the many problems of national economic growth, and our subject is the sectors that have not shared in the over-all progress. Why are they lagging behind?

For urban areas, it is not difficult to find out why problems of lowincome persist. The major reasons have been listed, in very brief terms. This is not hard to do; the general and the specific causes of low income contain few surprises. It is not quite as simple, however, to assess the relative importance of the separate causes of low income. In actuality, they are not separate and independent. In many situations there is a circularity of causal factors that confounds quantitative analysis. Why is the economic status of a particular family low? Who, or what, is responsible, and are there any remedies available?

Consider the case of a married man with a family to support. He is a relatively low-paid construction laborer, seasonally employed, filling in the odd seasons with casual work if and when he can find it. He entered the occupation voluntarily, knowing about its financial limitations in advance. Is he therefore primarily responsible for his low annual earnings? Let us further assume that his innate capacities do not fit him for other, more lucrative types of work. Is he responsible for his I.Q. level? Let us also state, in this illustrative case, that this man's earnings suffice for his personal maintenance but are inadequate to support an entire family. Since his marriage was a voluntary act, should it be said that he brought his low-income position upon himself? Some jobs, some occupations in some industries, even if they provide fulltime, year-round employment, do not have wage rates high enough to support a family of average size. If such jobs were filled only by secondary workers and if employable men with dependents held full-year jobs with higher pay, low-income problems, while not vanishing completely, would certainly be minimized.

The illustration of a married man with dependents was taken to represent an average situation. Most men of employable ages are married and heads of families and the great majority of families are those in which both husband and wife are present. In our culture, the head's income is the primary source of family support. To what extent are heads of families able to fulfill this responsibility?

In 1956, the most recent year least affected by economic recession or major industrial disputes, approximately 10 million men, or one out of every four in the productive ages twenty-five to sixty-four years, were part-time, part-year workers or else did not work at all during the year. Why?

Among the workers not fully employed, nearly one-half had been unemployed or on layoffs and almost one-third worked less than full time because of illness or disability. Figures comparable to these, which are derived from the Current Population Surveys conducted by the Census Bureau, are not available for nonworkers. We do have, however, complete figures for New York State for this same year. Reasons for not working full time were about the same in New York as in the nation as a whole. Among the men aged twenty-five to sixty-four years who did not work at all during the year, about a third cited illness or disability as the major reason and about one in ten said that no work was available. (New York data were obtained by a special state-wide household survey conducted by the Census Bureau for the State Inter-departmental Committee on Low Incomes, an agency established by

TABLE 1

LABOR FORCE PARTICIPATION OF MEN AGED 25 TO 64 YEARS,
UNITED STATES AND NEW YORK STATE, 1956

	United States (Number in	New York State Thousands)
Labor force status	38,360	3,980
Full-year, full-time workers	28,570	3,089
Part-year and part-time workers	8,490	768
Nonworkers	1,300	123
Main reason for not working		
Part-year and part-time workers	8,490	768
Unemployment and layoffs	4,065	349
Ill or disabled	2,547	177
All other reasons	1,878	242
	,	
Nonworkers	1,300	123
Ill or disabled	n.a.	76
No work available	n.a.	12
All other reasons	n.a.	35

Source: U. S. data: Current Population Reports, Work Experience of the Population in 1956. Series P-50, No. 77 (U. S. Bureau of the Census).

New York data: Characteristics of the Population, New York State, 1956 and 1957, Work Experience of the New York State Population in 1956, Bulletin No. 4 (Interdepartmental Committee on Low Incomes, State of New York) and unpublished tabulations from same survey source.

Governor Harriman in 1956 but now defunct. Detailed information was obtained from a representative sample of 5,700 families and 1,400 unrelated individuals.)¹

There is, of course, a very strong correlation between level of earnings and duration of employment. The New York State survey shows that while only 3 per cent of all year-round male workers had incomes less than \$2,000, 36 per cent of the part-year workers and 81 per cent of the nonworkers had incomes below this amount. Comparable data for the United States show consistently larger proportions of men with low

¹A limited amount of data from this survey is available in limited form, as follows: a series of reports entitled Characteristics of the Population, New York State, 1956 and 1957. Included in this series are the following bulletins: No. 1, Part 1, Family Income in New York State, 1956; No. 1, Part 2, Family Income in New York State, 1956, by Age, Work Experience, Wage and Salary Earnings of the Head of the Family, and Sources of Family Income; No. 2, Educational Attainment in New York State, 1957; No. 3, Part 1, Income of Persons by Sex and Color; No. 3, Part 2, Income of Persons, by Age, Income Sources, Work Experience, Marital Status and Education; No. 4, Work Experience of the New York State Population in 1956; No. 5, The Labor Force in New York State, March 1957. Copies of these bulletins may be obtained without charge from the Div. of Res. and Statis., N.Y. State Dept. of Labor, 80 Center St., N.Y. 13, N.Y. Also available is the report The Older Population of New York State, 1957, published by the Bur. of Res. and Statis., Div. of Employ., N.Y. State Dept. of Labor, 500 Eighth Ave., N.Y. 18, N.Y. A report entitled The Relation of Family Status to Income and to Participation in the Labor Force, New York State, 1956, is now being processed for publication by the Div. of Res. and Statis., N.Y. State Dept. of Labor, 80 Center St., N.Y. 13, N.Y. Some of the material from this report, as well as unpublished tabulations of the New York State survey data, are included in the present paper.

incomes, primarily due to the greater importance of agricultural workers in the nation than in New York.

Facts about the labor force and individual incomes, however, shed very little light on the economic status of families. Most persons live in family groups, and low-income status relates to the family as a unit, not to individual family members. Nevertheless, the family head traditionally bears primary responsibility for the support of the family. He fulfills this obligation if he can, but it seems clear that in a good many cases his responsibility for family support is shared with other members of the family. In New York, for example, heads of families were only half of the total labor force; wives and teenage children constituted one-fourth and the remainder consisted of other family members and unrelated individuals. Why do these secondary earners enter the labor force?

For some, as Gertrude Bancroft pointed out, the reasons are not economic. Nevertheless, economic necessity must drive many women and children to seek employment. In families which include both husband and wife (85 per cent of all families), the New York State survey shows

TABLE 2

MONEY INCOME OF MALES AGED 14 YEARS AND OVER WITH SOME INCOME, BY EMPLOYMENT STATUS, UNITED STATES AND NEW YORK STATE, 1956

Money Income in 1956 and Employment Status	United States	New York State	
Full-year, full-time workers Total	100%	100%	
Under \$2,000	11 11 17 21 40	3 9 16 20 52	
Part-year workers Total	100%	100%	
Under \$2,000. \$2,000 to \$3,000. \$3,000 to \$4,000. \$4,000 to \$5,000. \$5,000 and over.	47 16 13 11 13	36 20 17 13 14	
Nonworkers Total	100%	100%	
Under \$2,000 . \$2,000 to \$3,000 . \$3,000 to \$4,000 . \$4,000 to \$5,000 . \$5,000 and over	82 10 3 2 3	81 10 4 3 2	

Source: Ibid., Table 1, and Current Population Reports, Consumer Income, Series P-60, No. 27.

that when the husband's own income is below \$3,000, 85 per cent of the families had additional earners. The husband's income thus frequently establishes a minimum base to total family income, but when it is low relative to family needs, other persons in the family go to work. Whether or not the income of the head is sufficient to support the family at an adequate level depends, of course, not only on the size of his income but also on the number of dependents. By shifting to a per capita measure of income it is possible to take some account of the family-size factor.

On this basis, in normal families in which the head's income provides less than \$20 per week for each family member, six out of every ten families have supplementary earners. Moreover, nearly half of all supplementary earners are in these families where the head's per capita income is low. There are well over one million of such families in New York State. They include the bulk of families in which the heads are elderly and retired, as well as a large portion of younger families, and, in all, represent about a third of all families in which both husband and wife are present.

Not all of the families in which the income of the head is low fall into the low-income group. Clearly, however, this is true largely because of the presence of other earners in the family. Median income of normal families in New York in which the head was sole income recipient was \$5,000 in 1956, as compared with \$6,800 for families with additional income recipients. And of families in which the head's income was below \$3,000, one-half had total incomes exceeding the amount contributed by the head of the family.

If the family head is unemployed, underemployed, or unable to work at all and if there are no other family members available for employment, these families for the most part will fall into the low-income category, and furthermore many will be dependent upon transfer payments of various types. In New York, among all families with low incomes (under \$2,000), nearly as many received insurance benefits from federal social security as from wages and salaries. Also, significant proportions of families at this income level received other types of transfer payments—from other public and private pension programs, public assistance, interest, and rents. At the next higher income level, between \$2,000 and \$3,000, when there is a larger proportion of younger families, one in every ten received unemployment compensation benefits—this in a year of relatively high levels of employment.

Low-income problems in urban areas will persist as long as the earnings of male workers, most of whom are heads of families, are interrupted because of unemployment or layoffs, industrial disputes, illness or disability, and as long as they continue to be underemployed for whatever reason. If every man who is the head of a family was able to

work full time at his current occupation, the current number of lowincome families would be substantially reduced. In addition, if every male family head was able to realize his full potentials as a productive worker, low-income problems would be reduced to a residual minimum. Many of these men with low earnings are concentrated in the unskilled and semiskilled occupations and are currently unfitted by training and educational background for jobs with higher base wage rates. Of New York families with incomes under \$3,000, 70 per cent of the heads did not complete high school, while among families receiving public assistance, 92 per cent of the heads left school before obtaining a high school diploma. Demonstration programs in New York and elsewhere have shown that many workers in low-paying or outmoded jobs can be retained and upgraded. But incentives for providing such opportunities for advancement to all those who could benefit probably will continue to be limited as long as there is effective demand for the lower paid labor.

If the problems of unemployment and underemployment (including lack of work because of industrial disputes) were conquered, it would mean an effective break in the self-perpetuating cycle of low incomes. Low-income families breed poverty. The inadequacy of the father's earnings exerts considerable economic pressure on other family members, including the teenage children, to enter the labor market. These extra earners, like the father, are relatively untrained and have limited earning power. On the average, they are able to contribute only relatively small amounts to the family income although in many instances it is just enough to keep the family off public relief rolls. Among the children, many drop out of school sooner than their abilities would warrant. They enter upon their working life with an initial handicap that in the years ahead will be increasingly difficult to overcome. As these children, who leave school today because of economic necessity, grow older and form new families, there is a high probability that they will show up in future census surveys as the heads and wives in low-income families. Full employment of their fathers would have enabled many to get a better start in life.

Presumably, in the nature of things, there will always be residual cases of low income. Some persons will always become handicapped because of chronic illness or other disabilities. Some will grow too old to work. Some fathers will die; others will desert their families. Increasingly, however, public and private programs provide a flow of economic security to families needing such financial aid. By design, the income benefits from such programs ordinarily will be below the income of self-supporting families, however, so that the recipients will continue to be counted among the low-income population. Along these lines we have

achieved heartening progress in providing minimum care for some specific categories of need. As Harvey Perloff has pointed out, the major problem of low-income in urban areas—lack of full employment—has yet to be conquered.

During the next decade I would hope that economists and social investigators will not continue to be handicapped by lack of quantitative data concerning the interrelations between poverty and the distribution of incomes, productivity and economic growth, in terms of employment and labor force status of individuals as family members. Today we need, as never before, to bridge the gap between the aggregative, dehumanized statistics on abstract groups such as "the labor force" and the comparable but disassociated data on the family unit. In the language of census tabulations, this means correlating the data on persons with the family statistics. Such information will shed new light on the functionings of the economy in the light of a major motivating force: individuals operating in terms of their family setting and their family responsibilities.

Given sufficient interest, I see no reason why such tabulations cannot be obtained from the 1960 decennial census. It is our responsibility, as primary users of census data, to make our wishes known.

DISCUSSION

George H. Borts: The issue of lagging income sectors is part of the larger problem of differentials in returns to economic resources. Each of the speakers has addressed himself to differentials in a specific sector of the economy: Dean Welch to agriculture, Dr. Snyder to the urban worker, and Dr. Perloff to the lagging industry and region. Each speaker recognizes either explicitly or by implication that such differentials as exist may indicate the failure of our market economy to allocate resources in the most efficient manner. Efficiency in this sense exists when it is impossible to raise the net return to any resource through employment in other than its present use. I shall bring this definition to bear on the papers of this session.

Dean Welch indicates that labor from small, subsistence farms of the South can earn a higher return in urban occupations. He cites the failure of the market economy to eliminate the differential in return, and the persistent underemployment of farm labor underlying it. As he sees it, the primary causes of this failure are the lack of sensitivity to wage differentials evidenced by nonagricultural capital and the lack of knowledge or tastes, if you will, among farm families. He suggests that what is needed is more investment by state and federal governments in education, publicity, and loan programs—all directed toward inducing the farm laborer to migrate to urban areas.

Miss Snyder is concerned with the low-income problem among urban workers. Perhaps she is observing the results of migration from low-income agricultural areas—whether from the South or from the Caribbean. It would be interesting to know the migratory characteristics of her group, and perhaps more intensive sampling will yield this information in the future. She finds one major cause of low income; namely, duration of employment. This in turn is affected by cyclical or seasonal layoffs, industrial disputes, death, illness, and disability. Anything which improves the employment prospects of this group would increase the chance of a low-income family to raise its economic status. This would increase the ability of the children to continue their schooling and raise their future earning prospects. The implied inefficiency is clear. It is not the low income of the family head. Due to past deficiencies in training, he may indeed be earning as much as he is capable of contributing to an industrial economy. The inefficiency lies in the choice forced on the children to forego education and instead enter the labor force at an age when skills and earning prospects are poor. In a sense this group is facing a higher rate of time discount than the rest of society and is harvesting its crop of young too early.

Dr. Perloff's paper points to the same conclusions on a grander scale. Whole regions have lost their main source of employment and are gradually decaying into industrial slums. Economic opportunities in growing areas are luring the youth of the declining areas. The remaining population will gradually deteriorate in terms of vigor, willingness to invest and to undertake risk. The

prospect of reviving these areas is slim, and it is inefficient to use public resources for the purpose of delaying the inevitable. What is needed is public investment to make the resources mobile. To quote Dr. Perloff: "To add to the immobilities in the name of doing something about low incomes would hardly make good sense. . . . I would put at the top of the list a really massive effort to improve education in the depressed areas, to prepare young persons for a lifetime of skilled, productive work. . . . Educated, skilled persons can be counted on to seek out good employment and income opportunities; and equally important, situations favorable to continued development of the individual." This last statement, by the way, is an interesting hypothesis to test against income data on groups in different educational strata.

I have drawn these implications from the three papers for the purpose of indicating the kind of work they suggest to investigators in this field. It should be possible to quantify the returns from the social investments the three authors recommend. A good deal of this work already exists in the literature on agriculture. However, much remains to be done in the urban and regional fields. What is the return on social investment of the sort recommended by Dr. Snyder and Dr. Perloff? It is important to carry out these calculations, both as a check on the author's conclusions and as a guide to government action. It might be objected that such policies are desirable for their own sake, for the inequality of resource returns is objectionable on grounds of social justice. This may be so, but it is beside the point. If we have inefficiency here, as I believe we do, then the return on investment should be quite high—higher in fact than the return which private individuals might expect from their own businesses.

In this regard, I would suggest an important qualification to Dr. Perloff's recommendations. Social investment in declining regions may take two forms. It may be designed to increase the mobility of labor with a view to inducing its migration. It may alternatively be directed to reviving regions which have gone into decline. The latter is particularly important in the case of regions with a large manufacturing base. The loss of a major export industry may impair the profitability of other investments in the region. More importantly, it may also impair the confidence and venturesomeness of entrepreneurial groups in the region.

Social investment to induce regional revival operates in two ways. First, it seeks to raise the productivity of private investment by large-scale public improvements and by the subsidization of a core group of industries. These will eventually stand on their own feet and provide the basis of future growth. Private investment in a single plant or firm may not be profitable until the re-creation of an export base occurs. Second, social investment seeks to restore the flagging confidence and spirit of risk-taking among local owners of wealth. These are familiar phenomena in New England. The disparate growth tendencies of metropolitan areas of this region bear evidence to the varying degrees of scope and effectiveness of public investment in revival activities. The contrast between greater Boston and the rest of southeastern New England is a case in point.

Public investment may very well be called for on efficiency grounds. How-

ever, far more must be known about a region before one can say with confidence that appropriate policy is to induce its resources to leave the area. There are strong grounds for believing the contrary in many cases. Investment in industrial revival may frequently be more fruitful.

George E. Brandow: Dean Welch's paper and the pertinent parts of Dr. Perloff's do an excellent job of setting forth the main aspects of the problem of the chronically depressed, low-income farm areas of the United States. Clearly, this problem has not been largely solved by natural adjustment processes under past conditions, and it will not fade into insignificance in the foreseeable future under conditions that exist now. Appropriately, the papers go beyond the description stage to discuss policy. Dean Welch's appraisal of the programs specifically aimed at depressed agricultural areas is well balanced and comprehensive, and my comments supplement rather than object to what he has to say.

If one had to make a choice, it would be better to say that the low-income problem discussed here today is wholly distinct from the problem of unfavorable prices and surpluses confronting commercial farmers (most of whom are family farmers) than to say that the two are really the same thing. As Dean Welch indicated, improved prices give almost no help to low-income farmers with little to sell. Price supports have played no decisive role, or even an important one, in holding people on the woefully inadequate farms that are found throughout the depressed areas. On the other hand, a large migration out of low-income agriculture does not importantly improve the market position of commercial farmers elsewhere, because, if small units are combined with or into larger and better managed farms, production may actually increase, and land that is withdrawn from agriculture as low-income farmers leave is not producing much now. To solve either the low-income or the commercial farm problem will not automatically solve the other. Of course, there are many farms on the borderline between the two situations, and the two do overlap in several respects.

Dr. Perloff put the general problem effectively when he expressed the need for policy for secular full employment as well as for cyclical full employment. It is much easier, however, to gain broad political support for measures to overcome cyclical unemployment than to increase the productivity of resources now in low-income sectors of the economy. In depression, businessmen want to restore sales and profits, labor wants to go back to work, and farmers want to see a price recovery. No change in a way of life—just a better life—is involved.

Solution of the problem of depressed sectors, especially depressed farm sectors, is a different matter, however. Development of industry in present rural areas threatens competition for business and labor in established industrial centers. Migration from areas of surplus farm population creates more competition for jobs and often spreading slums and higher welfare expenditures in the cities to which migrants move. Most of the people who are well off under the *status quo* can continue to be well off even if nothing is done about the chronically depressed sectors.

Local resistance in low-income farm areas to programs expediting outmigration often is a more important obstacle than the indifference or opposition in better-off areas. Local businessmen see trade declining and cheap
labor becoming less plentiful. Congressmen see a loss of voters and fewer
Congressional districts for their state. Local tax bases, already inadequate,
are reduced further. Having a special and decidedly limited view of their own
position, local people often applaud contentions that any policy that permits
—much less encourages—a decline in farm population is wrong. I seriously
doubt that large-scale programs directly aimed at increasing migration from
disadvantaged rural areas can find enough political support anywhere to be
carried out as intended.

The earning capacity of many of the people presently in the depressed farm areas would be low in any economic environment. Much of the labor force has limited education, no skills for work other than manual labor, and sometimes low aspirations and standards of performance. The farm aspect of the low-income problem disappears in a statistical sense if these people move into the urban group, but low income often continues, at least in the present generation; and social and economic problems increase in the cities. A dual achievement is required, first, to raise the productive ability and social adaptability of the people involved, and, second, to bring the labor force and employment opportunities into proper adjustment, often by out-migration.

For these reasons, I strongly agree with Dean Welch's and Dr. Perloff's emphasis on general and vocational education as the basic means of attacking the problem. Schools must be good enough to make a major impact on students' aspirations and attitudes as well as on their conventional skills. Local and state resources cannot carry the full load, and federal aid will be necessary. This is a controversial issue, too, and, unhappily, it is made much more difficult by the question of racial integration in the schools.

Developing through education the innate abilities of people in the depressed farm areas will facilitate voluntary, unaided adjustment of resources within the economy, but other means can help get the job done. The full potentialities of the Rural Development Program are very important to know. The program has been operating on a shoestring for four years, and progress reports have been more distinguished for their laboredly enthusiastic tone than for evidence that a groundwork is being laid for real accomplishment. I can imagine several ways in which this program could make people in the low-income areas aware of neglected opportunities both within and outside of agriculture, could improve local services, and could make communities more attractive to industry. Yet I expect that results of even a considerably more vigorous program would, in general, be most impressive in communities that had significant natural resources or other advantages with which to start. Results in these communities might be ample justification for the program, and yet the poorest areas would remain chronically depressed.

Another means of facilitating adjustment is the current conservation reserve program. With this might be combined a federal-state program to acquire by long-term lease or purchase submarginal farm land for development for forest and recreational purposes. We have had a tradition in this country

that game, camp sites, and other products of the great outdoors should occur as naturally and freely as the air. But with a rising population, better transportation, and high incomes in most of the economy, we might well regard these amenities as something to be produced on a large scale and to be paid for by those who use them.

Other matters such as employment information and assistance in creating farm units large and productive enough to hold their own in commercial agriculture might be mentioned, but I shall use the remaining space for another purpose. One great need in this whole subject is to know what specific forms of general ideas such as those discussed here would be most effective and what results they would achieve. Experimentation is needed if research in this area is to be conclusive, yet real-world trials are far beyond the means available to most research. Touchy political and social questions render the government ineffective for this kind of experimentation. Here is a place where some of the wealthiest foundations can perform a unique function. If enough imagination, money, and skill in the social sciences can be gotten together, important gains can be made in bridging the gap between plausible hypotheses and policy action in this important area.

VICTOR ROTERUS: All three papers were informative and interesting. We are particularly indebted to Dean Welch for instilling into his paper the observations gained from a lifetime of living with and thinking about the problems of which he speaks. His is a remarkably sage and balanced paper.

The three papers make clear that we are talking about two quite different types of geographical situations within the subject field of lagging sectors in the economy. One is the low-income, underemployment rural areas problem—so widespread in southeastern United States—to which Dean Welch addressed himself; and the other is the urban-industrial unemployment problem which we find typified in some of the textile centers of New England and the coal areas of eastern United States.

Although in some areas the two types of situations overlap, I think the distinction is important from a policy viewpoint in devising programs to try to remedy these problems. This is particularly so because some of the current bills before the Congress do not recognize that solutions to these two types of situations may be different. The urban-industrial areas (coal and textile centers) are areas which once had a functioning economy which had experienced a severe and lasting employment shock. These towns have municipal facilities such as water and sewerage systems, they have banks and other commercial facilities, and in general have a relative concentration of capital and social investment. Rural low-income areas—without meaning to deprecate their very real problems—have neither suffered a complete reversal in their economic fortunes nor do they have as high an investment or salvage value of facilities. These distinctions have definite policy implications. Perhaps there is more need in the one instance for extending outside assistance and in taking more drastic measures for solutions than in the other. Again, perhaps the migration solution is the major part of the answer in one situation and less important in the other. Maybe what will help redevelop the economy of one type of area is completely inappropriate in the development of enlarged or new income opportunities in the other.

I should like also to venture an observation with respect to the mobility or immobility of the people in these areas—particularly in the urban-industrial unemployment areas. We are apt to confine thinking on mobility to lower rungs of the income ladder and to labor. I submit that the major problem of immobility may not be so much with these people as it is with the upper income levels—the managers and community leaders. Where will the Chevrolet dealer get a new franchise if he leaves Wilkes-Barre? Where will the banker go to open up a new bank if he leaves Hazard, Kentucky? These are the elements of the community—and they are articulate ones—who will not accept the migration solution either for themselves or the community as a whole.

There is an implication in Perloff's paper that almost nothing is being done about these problems and that almost no progress is being made. This is certainly not generally true, particularly with respect to many of the urbanindustrial unemployment areas. Most of the progress that has been made has been through the initiative and effort of the people in these communities themselves. Capital has been raised to stimulate new manufacturing industries and to encourage economic growth. County governments have co-operated actively with private industrial and economic development organizations in aggressive and intelligent programs. In order to attract the manufacturer who wants to expand in a hurry, many communities have constructed speculative or "shell" factory buildings which are shown a prospective manufacturer and finished to meet his specifications in a matter of a few weeks. Even the state governments have chipped in. Pennsylvania, for example, has a loan program for the distressed areas in its state under which in the last three years over 12 million dollars of "seed" money has stimulated factory construction projects costing over 38 million, resulting in some 20,000 factory jobs. Similar financing schemes have been adopted in other states with distressed areas.

There has been some help—acknowledgedly inadequate—from the federal level. Our own modest Office of Area Development in the Department of Commerce—a sort of clearinghouse, technical-assistance center—makes the successful experiences and techniques of one community available to other interested communities; for example, a publication of ours on the planned industrial park has been used extensively in the development of such parks. We also advise community organizations on just which of the available federal programs can be helpful on certain of their problems; e.g., many are not aware of the availability of grants for sewerage treatment works or of loans for water distribution and other community facilities. Another thing we do is to make studies identifying the growth industries and analyzing their locational requirements so that community industrial development programs can be more effectively oriented. We also use the facilities of the Department of Commerce to bring the locational assets of these areas to the attention of manufacturers who are seeking locations for their new plant expansions.

Now all of this effort—and I want to emphasize again that it is the local effort which, by far, counts for the most—has had some results. Manchester, Nashua, Ware, and other textile centers in New England have long ago made

successful adjustments. Lawrence, Massachusetts—perhaps the most publicized and one of the most severely affected urban-industrial areas—is now clearly out of the woods and actually looks and is prosperous. Lawrence, with a large infusion of electrical, electronic, and other industries, undoubtedly has a more solid economy than when its welfare was almost solely identified with textiles. Scranton, Wilkes-Barre, and Hazleton in the hard coal areas are making progress; but you must remember that a single mine shut-down throws several thousands out of work and these towns are replacing those jobs with factories whose employment at best is only several hundred apiece.

Perhaps these self-engendered adjustments are too slow and take too long. If they can be accelerated—either through migration or through strengthening the economy—this should be done even at public cost. There remain areas, however, which are not as well located with respect to markets and do not have some of the resources or facilities of the areas which are making progress. Southern West Virginia and eastern Kentucky are areas where the outlook under present methods and available aids is definitely not bright. Local people and institutions cannot cope with the problem and supplementary help does not seem to be enough. These areas do have excellent recreational and tourist potentialities, but it will require bold plans and a heavy infusion of outside capital to develop these possibilities.

I should like to close with this thought. The papers on this panel have indicated that the people from these lagging areas often wind up in the slums of our larger industrial centers when they migrate. It is accepted policy that public money be spent in slum clearance and redevelopment—a process which is laudable but which does not cure the economic problem. Where economic analysis so indicates, might it not be at least as prudent policy to invest capital for permanent economic development at the point of the original migration—in the open hills as against the congested slums?

PROBLEM OF INTERNATIONAL HARMONY: ECONOMIC POLICIES FOR A LASTING PEACE

AMERICA'S ECONOMIC RESPONSIBILITIES AS A GREAT POWER

By RAYMOND F. MIKESELL University of Oregon

The subordination of economic interests to foreign political goals has been one of the most outstanding national policy developments of this generation. Most American loan capital no longer flows abroad simply to earn a higher return. Government assistance to American enterprise abroad is no longer primarily designed to protect American property or to open a door for our nationals to trade and invest for profit. The Administration seeks to reduce barriers to trade, but its most persuasive arguments with the Congress and the public have little to do with the economists' two-hundred-year-old plea for free trade as a contribution to real national income. Even the welfare interest in a growing national output has been subordinated to the battle of comparative statistics with the Soviet. We seem to have entered an era of conspicuous social accounting!

The transposition of economic and political goals in our foreign policy—or standing Karl Marx on his head—imposes special obligations on economists who can no longer be guided by economic welfare as their primary criterion but are increasingly required to apply their tools for political and security ends. Nor can they, I believe, leave the ends themselves exclusively to political and security theorists, since ends and means are not only interrelated but at times indivisible.

Before discussing ends and means, I will say a few words about America's position and capabilities in the world of nations. We have rather reluctantly assumed the role of leader or guardian of some seventy-five independent nations, which comprise the free world, or, more correctly, the non-Sino-Soviet world. About a score of these nations, with over 700 million inhabitants, have been created since World War II, and more are joining the ranks of the autonomous states every year. There are two fundamental aspects of our position as a great power in this motley group of states we call the free world. First, this country is the leader and organizing agency for dealing with the Sino-Soviet bloc and for concerted action in countering major threats to security arising either from the outside or from within the free world.

Second, we are seeking to maintain the independence of this growing number of autonomous states by preventing members from succumbing to Sino-Soviet control through pressures operating from within.

These responsibilities of leadership and guardianship have been placed upon the United States for two reasons. First, the organized strength and world-wide goal of the Soviet Union made it obvious early in the postwar period that unless some country performed these functions, Soviet communism would eventually conquer the globe. And second, only the United States had the military and economic capabilities of performing such a role. But while the United States was the obvious choice, other nations vary considerably both in their recognition of the need for leadership and for concerted action in dealing with the security threat, and in their willingness to sacrifice special national interests to the arrangements devised for group security. At the one end of the scale are the NATO nations which have been willing to enter into a fairly comprehensive—though perhaps not comprehensive or tight enough—military and political alliance under U.S. leadership. At the other end are the so-called "uncommitted" nations that have for one reason or another rejected, or denied any need for, a system of political and military alliances.

Any consideration of our economic responsibilities as a great power is complicated by the fact that our relative power position is changing rapidly. Our military, political, and economic qualifications were at their highest when we assumed this role in the late forties. At that time we had a monopoly in the field of nuclear weapons, we were the only surplus area for a large number of commodities desperately needed by the rest of the world, and politically we were still in the postwar honeymoon, relatively unmarred by the animosities that the exercise of political leadership itself would inevitably create. Our position has changed enormously over the past decade and the next few years are likely to witness an even greater diminution of these initial qualifications for the role we have assumed. In the military field, nuclear monopoly became a duopoly in 1949, is currently a three-power oligopoly, and is fast becoming an N country balance of terror. Our postwar economic supremacy has not only been whittled down by the growing military oriented output of the Sino-Soviet bloc, but our competitive position in world markets is being seriously challenged by the countries whose postwar recovery we have guided and financed. Before the echoes of dollar shortage have died out, our gold losses have created widespread alarm for the international stability of the dollar. The growing economic and political unity of Western Europe and its waning dependence upon U.S. economic and military assistance will inevitably weaken our leadership in the NATQ alliance. Moreover, the emergence of independent states whose territories were but recently under European control has reduced the power and influence of the North Atlantic countries in the free world.

While these shorter run forces have shifted our international economic and political posture in a matter of degree, longer run developments portend more fundamental alterations. I refer to the higher rate of growth in the Soviet Union, whose energies are devoted more toward the basic determinants of national power such as scientific education, research, and heavy industry and resource development. I refer to the rate of population growth in Asia, Africa, and Latin America. Over the next generation or two the relative increase in population of countries outside North America and Europe, including the Soviet Union, coupled with rapid industrial and technological advance and in some cases rising output per capita, cannot help but shift the world's economic and political balance at the expense of both the NATO powers and the Soviet Union. It is by no means inconceivable that groups of independent states in the Middle East, Asia, and Latin America will achieve a considerable measure of political and economic integration so as to create significant power centers outside of Europe and North America.

These developments and trends alter significantly the nature of our position as a great power and the economic responsibilities that accompany it. In the political sphere, I believe that the conception of the United States as the free world power center in a bipolar world—a concept which never had much practical validity anyway—must give way to an alliance system in which our leadership supremacy will gradually fade. Among other things, this means that NATO must become stronger as our own relative position becomes weaker. On the economic side, these developments mean that our responsibilities for maintaining free world defense capabilities must be shared to a greater degree than they are today. In Western Europe our military assistance program should aim more at increasing capacity to produce modern weapons than in supplying end products. Other NATO countries should also be called upon to share with their own production the burden of military and defense support for non-NATO countries. Needless to say, such cooperation in the political and military spheres cannot exist without a high degree of harmony and co-operation in the fields of trade and investment. Moreover, the fact that our power position has changed does not lessen our responsibilities as a world power and leader. It just complicates our task and calls for a higher order of statesmanship.

The Less-Developed Areas

I cannot begin to deal with all the aspects of economic responsibility which our international position and foreign policy demands. Virtually

all facets of domestic and foreign economic policies are involved. In addition to overt measures directly affecting our international relations, there is the all-important image of America in the eyes of the world. I shall confine my discussion very largely to one aspect of our international responsibilities; namely, that relating to the less-developed areas.

First of all, assistance to the less-developed areas cannot continue to be a near monopoly of the United States. The magnitude of the task, if meaningful goals are to be achieved, plus the growing capabilities of other countries, argues for a sharing of this responsibility. If for no other reason—and I believe there are others—I would argue for a gradual shift to multilateral development assistance. By multilateral assistance, however, I mean assistance administered by agencies whose political objectives are in accord with those of the United States and other members of the Western alliance. But whether such assistance is provided on a unilateral or a multilateral basis, there must be a theoretical economic and political framework into which can be fitted the fundamental interest of both givers and receivers.

There is undoubtedly a moral basis for development assistance; and certain types of foreign aid may be justified on grounds of national economic interest. But fundamentally and realistically, a large-scale aid program involving a significant portion of the national budget must be justified on security grounds. While I have every sympathy for a moral justification of assistance to less fortunate people, I believe that much of the economic justification of foreign aid by the Administration and private groups is a perversion of the national interests. The arguments that foreign aid benefits the United States because it gives jobs to so many thousands of American workers or expands the market for our exports or helps solve the problem of agricultural surpluses are spurious arguments and unworthy of economists who employ them. The same thing can be said of schemes for the unselective subsidization of U.S. capital exports. With few exceptions the increment to our social value product from the use of a given amount of capital at home is greater than the net return after foreign taxes on the same amount of capital which is transferred by the foreign investors to this country.

Basic to the relationship between development aid and security has been the assumption that rising output per capita contributes to political stability and the creation of democratic institutions. Yet we see that in many countries the process of economic development creates tensions which often result in violent revolutions that destroy whatever semblance of democracy may have existed. I must confess considerable uneasiness about the relationship between economic growth or rising levels of living and political stability. Man, developed or undeveloped, does not live by bread alone. National pride and the feeling of identifi-

cation with a social, political, or religious movement have often proved to be more powerful than individual material gain. Very often the promise of the fruits of economic growth as represented by smokestacks on the horizon, gigantic hydroelectric dams, and modern highways are enough to satisfy for a time the rising expectations of the peoples of the backward lands. There are, of course, many dimensions of economic progress, some of which are not reflected in national income statistics. I have often wondered just what form, if any, the world-wide economic development movement might have taken if social accounting had never been invented!

I believe we must evolve a somewhat more sophisticated theory of the relationship of economic development assistance to our responsibilities for free world security than one based on a simple correlation between growth and political stability. Over the long run, stability and democratic progress depend upon the ability of governments to deal successfully with a variety of economic, political, and social desires and conflicts; the creation of conditions whereby the vast bulk of the population experiences a rise in levels of living is an important but not a sufficient condition for democratic progress. There are often basic issues such as land reform or government corruption or gross inequality of income, a satisfactory solution of which may be far more vital to our political objectives than a rise in total output per capita. An effective aid program must be guided by the political as well as the economic environment of the host country. Wherever possible, therefore, our aid programs and advisers should give highest priority to constructive efforts within the host government and in the private economy to create the conditions for long-run political stability. Thus, for example, substantial technical and financial assistance for land reform or the creation of credit institutions for strengthening small industries and farms may represent a more effective use of our aid resources than, say, a hydroelectric dam.

In the early postwar period our development aid programs did not seem to be guided by any consistent theory of economic development or of its political impact. We sought to provide technical assistance here and there in order to raise productivity and improve health and education. Our public lending institutions were prepared to finance sound, bankable projects on a case-by-case basis, and we provided grants in emergency situations in politically sensitive areas where capacity to repay did not seem to warrant loans. Piecemeal and discontinuous programs might be justified in countries where the conditions for long-run economic progress were favorable and an occasional boost would help to assure the ultimate outcome. But for countries like India and Pakistan and Egypt, where the prospects for a long-run rise in output per

capita have been very much in doubt and where any reasonable expectation of politically satisfactory progress requires substantial, comprehensive, and sustained external assistance, an eclectic and sporadic assistance program may have little if any value in terms of achieving basic political goals.

In recent years international political economists have evolved an approach to development assistance along the following lines. Political stability and independence from Communist domination require a gradual but measurable rate of growth in the level of living and output per capita for the poorer countries of the world. Therefore, foreign capital should be provided to developing countries in such amounts and for whatever period of time may be necessary to achieve a satisfactory rate of growth in output per capita on a self-sustaining basis; i.e., without further net capital imports. The purpose of the external capital is to raise the level of capital formation to a rate consistent with growth in output per capita and to maintain this rate at that level until domestic savings are large enough to support a rate of investment growth sufficient to finance the desired rate of growth in output. This critical level of investment must be maintained until the economy breaks through the sound barrier and "takes off" on a free flight of self-sustaining growth.

This approach to the development process and to foreign aid has been subjected to a number of criticisms, perhaps most of which are recognized by its exponents. For one thing, external financial capital will not necessarily secure the desired level of productive investment, nor can we assume stability of the incremental capital output ratio. Growth usually takes place in response to a complex of economic, political, and social factors operating within an economy and not simply as a consequence of a large inflow of foreign capital. In fact, some economic historians have pointed out that accelerated economic expansion has not generally been correlated with capital imports. (See, for example, Douglass C. North, "A Note on Professor Rostow's 'Take-Off' into Self-sustained Economic Growth," The Manchester School, January, 1958, pages 68-75.) There also appear to be some cases, e.g., Argentina and Chile, where engine trouble developed well after the take-off. There is nothing inevitable about growth even after the sound barrier has been pierced. Misguided governmental policies are a powerful force for deceleration.

But with all of its difficulties, the self-generating growth approach provides a better basis for economic aid than piecemeal and sporadic assistance which fails to consider the economy as a whole in relation to the political objectives to be achieved. I do believe, however, that the goal of economic growth in terms of social accounting units needs to be

broadened to take into account the politically significant desires of the people. A nation in which three-fourths of the people are clamoring for land reform may exhibit a high degree of political instability even though aggregate output growth is proceeding satisfactorily. Serious tensions may arise from wide disparities in the rates of progress between sectors of the economy. If our economic aid is to promote political goals, economic objectives must be carefully selected with reference to political realities. Not only may target rates of per capita GNP be impossible to obtain, but a 2 or 3 per cent rate of growth in per capita output which requires a high level of savings and investment may not be the most effective objective from a political standpoint. Greater economic security, improved working conditions, better health and education, community development, the elimination of extremes of poverty and wealth, and better government are elements of welfare that are not adequately reflected in GNP. Yet these elements of progress may be felt more directly and create more of a sense of progress than some of the elements which constitute a rise in per capita GNP.

All of this does not suggest that we go back to a policy of piecemeal and sporadic economic assistance, or that we seek short-term political gains by building sports palaces or steel mills in the desert or by financing balance-of-payments deficits arising from inflation and overvalued exchange rates. It does recommend that we look at the whole socioeconomic structure of the country in determining elements of strength and weakness in the growth process and in discerning the most politically desirable as well as the most economically feasible directions in which we ought to assist the economy in moving. While recognizing that steady growth is essential for realizing many of the specific economic objectives having a high political priority, I would put somewhat less emphasis on statistical growth targets. This is not to be interpreted as a means of reducing economic assistance. Indeed, if we operate on the principle that aid programs should be designed to assure that economic objectives will be carried out fully, both the quantity and the duration of economic assistance will need to be larger. Also what is proposed suggests a higher degree of co-operation between lending or granting agencies on the one hand and the aid recipients on the other. Foreign aid should be employed as a means of bringing to bear the maximum amount of influence, both economic and political, on the less-developed countries. If the aid-dispensing process is to be neutral regarding sound economic policy, regarding democratic ideals, regarding social welfare, and regarding defense against aggression, then I think it has abdicated its function.

There are a number of institutional and other obstacles to the implementation of an aid program for achieving steady economic progress

along the lines I have been suggesting. I would like to review briefly a few of these obstacles.

In a paper presented at the American Economic Association meetings last year, Dean Harlan Cleveland pointed to the difficulties arising from administrating our foreign assistance programs through fifteen or twenty agencies all operating in the same country. (A.E.A. Papers and Proceedings, May, 1959, pages 216-31.) While decentralization at the operating level may have certain advantages, there has not been sufficient policy co-ordination at the country level to influence the direction of the host country's economic progress along lines dictated by an overall assessment of internal economic and political factors. Moreover, the existence of several public lending institutions, each with its own lending standards and each operating on a project-by-project basis and largely without co-ordination at the country level, cannot carry out a long-range financing program directed toward steady economic growth. In this respect the tendency to create a new institution every time a new type of economic assistance is proposed is to be deplored. As the London *Economist* has quipped, we seem to be guided by the principle that "a bank a day keeps the Russians away"!

We are all aware of the obstacles to economic development arising from the failure of countries to formulate long-range development programs and to adopt sensible monetary, fiscal, and exchange policies. Political instability and a weak, if not actually corrupt, administrative machinery often prevent the adoption of government policies essential to successful development. The government is under constant pressure to raise wages, increase the number of civil service jobs, hold down prices of goods and services produced by nationalized or state controlled industries, maintain subsidy rates for imports, and discriminate against foreign enterprise. While there are serious limitations on the ability of outside agencies to promote internal economic reforms, this should be one of the major functions of our aid programs. However, the diffuse and unco-ordinated character of our assistance, both bilateral and multilateral, makes it difficult to exercise the maximum amount of influence that might be brought to bear.

Another obstacle to achieving our objectives for the less-developed areas arises from the predominantly loan character of our development assistance and from the limitations on the capacity of many less-developed countries to service additional investment. Both the Congress and the Administration prefer loans to grants and there are understandable reasons for this. An attempt has been made to deal with this problem semantically—that is, by calling grants loans—through the soft-loan operations of the Development Loan Fund. While there has been enthusiastic response on the part of Congress to Administration bills

increasing the lending authority of hard-loan agencies such as the Export-Import Bank and the World Bank, the Congress has been far less willing to provide large sums for the DLF. Soft loans are also made under the PL 480 program for exporting surplus agricultural commodities. This is fundamentally a farm support operation and the Congress and the Administration will quickly terminate this semantic game if and when we adopt a rational farm policy.

Since the bulk of our public capital available for the less-developed countries is likely to take the form of loans repayable in convertible exchange, the future flow of this capital will be limited by judgments as to capacity to service. Now capacity to service is a slippery concept and certainly cannot be properly measured by simple ratios or formulae. Realistically its measurement requires a projection of the entire balance of payments, including the future volume and pattern of capital inflow. Needless to say, projections of this sort are notoriously unreliable. I am impressed, however, with the rapidly rising debt-service-exchangeearnings ratios for a number of countries receiving large loans in recent years. Part of this is due to the tendency of some countries, particularly in Latin America, to borrow large amounts on relatively short term. If these debts could be amortized over a longer period, debt-serviceexchange-earnings ratios would be considerably lowered. More fundamentally, I am concerned by the relatively slow growth in the value and volume of exports of many less-developed countries seeking to achieve a high rate of output expansion with the aid of foreign capital. Economic expansion is inevitably accompanied by a growing demand for imports, and in spite of efforts to achieve a rapid rate of substitution, most Latin-American countries have not been able to hold down the rate of increase of imports of consumers goods—still less of capital goods, fuels, and materials—below the rate of growth in total domestic output.

For nonindustrial countries as a whole, the volume of imports has been increasing at a considerably higher rate than their export volume during the postwar period. Between 1937-38 and 1957, the volume of imports of nonindustrial countries rose by 104 per cent, while their export volume rose by less than 40 per cent, and over half of this rise was accounted for by petroleum. Between 1928 and 1957, the volume of exports of nonindustrial countries increased by only 51 per cent and, again, petroleum accounted for about half the increase. The exports of countries exporting mainly nontropical foods actually declined between 1937 (or 1928) and 1956, while exports of countries exporting mainly agricultural raw materials rose by only 7 per cent between 1937 and 1956. (See GATT, *International Trade 1957-58* [Geneva, 1959], page 15.) Moreover, recent projections of imports of the products of non-

industrial countries by the industrial countries indicate a continuation of this slow rate of growth in nonindustrial country exports except for those countries exporting mainly minerals. (See United Nations, *Economic Survey of Europe 1957* [Geneva, 1958], pages v-3 ff.)

The higher rate of growth of imports relative to exports has, of course, been made possible by improved terms of trade (up to 1954) and by capital imports. The outlook for any significant long-run improvement in terms of trade is doubtful, especially for those countries that are mainly exporters of agricultural commodities. Nor can we expect foreign capital to bridge the gap between slowly rising or stagnating exports and a rapidly expanding volume of imports for more than a limited period of time. Let us assume, for example, that exports are rising at a rate of 2 per cent annually, and that in order to achieve a satisfactory rate of growth imports must rise by 3 per cent per year, the gap to be filled by capital imports. Let us also assume that imports are initially 100 million dollars per year and exports 90 million per year so that the gap to be filled by capital imports during the first year is 10 million. If we assume amortization payments of 5 per cent per year and interest at 5 per cent per year, gross capital imports after ten years will have to reach a level of about 45 million dollars per year and at the end of twenty years of nearly 120 million, or almost twelve times the initial import surplus. Moreover, after twenty years the ratio of debt service to export earnings would be in excess of 50 per cent, assuming there was no external debt to start with.

While this model may be regarded as an exaggeration, this is essentially the situation faced by the majority of the less-developed countries on the basis of past performance of their exports and of their import requirements for steady growth. Moreover, quite a few countries have investment-service—exchange-earnings ratios of 20 per cent or more today. Public lending institutions and private investors are unlikely to continue to pour capital into a country in the face of a steadily mounting investment-service—exchange-earnings ratio and of poor prospects for the future growth of exports. It seems clear, therefore, that either the less-developed countries must expand their rate of export growth or there must be a substantial change in the nature as well as the volume of our development assistance.

I suspect that this problem will have to be met along three different lines: the expansion of exports; a greater reliance on grants or soft loans; and some revision of the loan policies of public lending institutions.

If by aid we mean loans repayable in foreign exchange, the frequently expressed alternative "trade or aid" is wholly false. A program of development lending which is not carefully geared to the expansion of exports is unsound and likely to result in defaults and a sudden cessation

of capital inflow, both private and public. Expanding exports is, of course, a responsibility of both the less-developed and the highly industrialized countries. There can be little doubt that the economic and financial policies of Argentina, Brazil, Turkey, and a number of other countries have prevented the growth of production of certain commodities, the world demand for which was expanding, and have impeded a transfer of resources out of other commodities faced with long-term overproduction and surpluses. Developing countries have often starved their export industries for capital and burdened them with unfavorable export exchange rates, while encouraging inefficient and high-cost industries engaged in production for the domestic market. There are growing indications, however, that development planners in some countries at least have seen the error of their ways. It is also encouraging to note that the less-developed countries in Latin America are coming to the conclusion that successful industrialization requires a broadening of the market for industrial products and they are seeking to achieve this through the reduction of barriers to intraregional trade.

But it is also the responsibility of the United States and of the other Western industrial countries to broaden their markets for the products of the less-developed countries. The almost universal employment of import quotas, high tariffs, and artificial stimulants to domestic agriculture, including export subsidies, has undoubtedly played an important role in the poor showing of exports for the nonindustrial countries since 1930. The United States and Western Europe have a very definite responsibility in adjusting their internal production and foreign trade position to accommodate an increasing flow of imports from lessdeveloped countries. This applies not only to primary commodities but to manufactures as well. As a recent GATT study points out, it "may be a natural and economic development that relatively poor countries with high population densities like India and Hong Kong export cheap labor intensive manufactures in order to import foodstuffs like wheat from developed countries such as Australia, Canada, and the United States." (Trends in International Trade, op. cit., page 80.)

The increasing trend in favor of development loan financing as against government grants has much to be said for it. It is believed that a country will be inclined to make more effective use of a loan than it will of a grant. Moreover, an institution empowered to make foreign loans provides a continuity of relationship with the aid recipient that does not exist in the case of grants made by ICA on the basis of annual appropriations.

On the other hand, there is a recognition that many countries lack the capacity to service large external loans from the existing public lending institutions. Hence the principle of repayment in local currencies has been embodied in the Development Loan Fund and in the proposed International Development Association. One important advantage of this type of loan is that it requires the recipient to meet the local currency payments through taxation or, in the case of an enterprise selling a service, by collecting enough local currency to meet the loan charges. If this process is not circumvented by inflationary financing, it may encourage the borrowing government to accumulate funds which can then be released for development projects by the public lending institution. A second advantage is that this process gives the public lending institution control over the subsequent employment of the interest and amortization payments. While there are good reasons to doubt the significance of this control, at least it provides the public lending institution an opportunity to review and consult with the borrowing country regarding its development program. Obviously, of course, this whole process can be reduced to pointless bookkeeping by the financial authorities of the borrowing countries since they can avoid any influence on their policies imposed by the foreign lending institution by compensatory financial operations.

The principal objection to this kind of soft loan is the very indefinite ultimate obligation which is placed on the borrowing country and the general misunderstanding of the nature of the operation by the public, both at home and abroad. I strongly suspect that the practice of making soft loans arose out of the widespread misunderstanding of the transfer process involved in the repayment of international obligations. What I suggest we need, therefore, is an honest soft loan. While I will not propose a formula, I think such loans might differ from hard loans by the provision of exceptionally long grace periods; by very long amortization schedules, say, up to fifty years as in the case of the 1946 British loan; and by liberal, but definite, contingency arrangements which might waive or defer payments of interest or principal in years of exceptionally low export receipts.

Finally I come to the loan policies of the public lending agencies such as the World Bank and Export-Import Bank which are making hard, or bankable, loans. I think some way must be found for these agencies to look at the loans they make to the less-developed countries in terms of a more or less continuous flow of capital rather than simply in terms of financing specific projects. I say this without prejudice to the principle of tying loans to specific projects because I believe this approach provides an important means by which external lending agencies can render technical advice and guidance to borrowing countries and provides an opportunity to review their broad development programs. But there is a need for a single institution or agency charged with the job of maintaining a close and continuous relationship to the developing country in order to assist in the planning of its capital imports in relation to its development program and to its debt service capacity.

The Domestic Economy

For several years nearly everyone who has discussed the cold war or America's leadership in the free world has stressed the necessity of growth. Mr. Khrushchev's boastful declaration of economic warfare on the United States and the growing volume of statistics on Soviet growth rates have led to demands by spokesmen for nearly all economic and political interests that we grow faster through special government measures favorable to one of these interests. However, I find it very hard to see significance in rates of growth in GNP or any of its components unless I know what we are growing for and what its relationship is to our long-run security. I do not see how adding to our capacity to produce automobiles and color TV sets will win any battles in Mr. K's economic war. It is argued that we must consume less and invest more so that we can increase our rate of growth; and that the tax system should be altered so as to encourage investment. But until I know what kind of investment is to be encouraged, I fail to see the value in simply increasing investment for its own sake. I suspect that investment will follow demand, and if the government channels demand into research, education, development of natural resources, foreign aid, and an adequate defense establishment and at the same time avoids inflation by proper financial policies, investment will flow in adequate amounts and into the right places.

Growth alone will not save us. What we need to discharge our economic responsibilities as a great power are: a strong defense establishment for ourselves and our allies which is not weakened by arbitrary limits derived from budgetary accounting; a foreign aid program aimed at supplying, in co-operation with other industralized countries, all of the capital that the less-developed countries can productively employ in accordance with reasonable standards of performance; a program of education and training which will be limited only by the intellectual capacities and personal desires of our youth and geared to the manpower needs of a high productivity modern economy; and a vastly expanded program of research, both basic and applied. This last point cannot be overstressed since as our scientists have been telling us, the greatest danger to our security lies in the possibility of a scientific break-through by an unfriendly power on the order of, say, the nuclear bomb, well in advance of our own research achievement.

If we are to do all these things and still have enough left over for larger per capita consumption of material goods and services, we must certainly grow at a higher rate than we have been growing in recent years. But we shall grow in ways that will help to keep us strong and free and not by maintaining a pointless advantage in a numbers game.

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PROMOTING FREE WORLD ECONOMIC DEVELOPMENT THROUGH DIRECT INVESTMENT

By Jack N. Behrman University of Delaware

U.S. direct private investment abroad is the allocation of U.S.-owned resources to a foreign business operation. Its contribution to economic growth of the free world arises from the commitment of real resources—not simply U.S. dollars. The proposition I wish to lay before you is that the major impacts of U.S. direct investment abroad arise less from U.S. dollar flows than from capital formation by U.S. interests in the host country and from transfers from the United States of nonmonetary assets, such as managerial and technical skills. In the first part of this paper, some evidence is presented as to the comparative importance of these elements of direct investment and as to their distribution over the free world. In the second part, a précis of some policy implications is given—not as firm conclusions but as guidelines to further analysis and as cautions on future problems which we will probably have to face.

Nature, Magnitude, and Direction of Direct Investment

For purposes of this presentation, I would like to classify direct foreign investment into either capital (financial) or nonfinancial according to its form or origin. Capital investments refer to contributions of capital funds and equipment provided by the owners to the foreign subsidiary (or branch); nonfinancial investment refers to contributions of management, technicians, know-how, patent rights, and trade-marks. These latter obviously require money expenditures; but the services are not denominated as capital sums. They are, however, sometimes capitalized into equity shares for the parent, showing their close relation to capital investment.

Capital Investment. To determine the nature, magnitude, and direction of foreign capital investment by U.S. companies, we undertook to question 115 large corporations which were known to have extensive foreign operations. Through mailed questionnaire and personal interview we obtained information on 72 companies, having over 60 per cent of the total outstanding U.S. direct investment abroad (excluding Canada). These companies own operations abroad in the fields of

¹This was part of a broad study on foreign investment by the University of Oregon under a Ford Foundation Grant.

² The questionnaires were sent prior to the publication of the Department of Commerce's new survey on U.S., direct foreign investments. (See the articles by Sam Pizer and Frederick Cutler in the Survey of Cur. Bus., Jan., Aug., and Oct., 1959.)

manufacturing, assembly, extraction (mining and agriculture), and selling, but not insurance or finance. Our questions included some directed at (1) fiancial sources used in investing abroad and (2) the growth in the value of direct foreign investment.

The responses of these 72 companies, relating to their foreign investments excluding Canada, indicate that the primary sources of financing of capital expenditures abroad are retained earnings and local borrowing. Ten per cent of the companies indicated that all foreign earnings were retained abroad for future investment; and 30 per cent stated that a major portion of earnings were retained abroad. Forty per cent reported that retained earnings were a "significant" or "important" portion of their foreign investment. Only 17 per cent said that it was a small source of financing, and 3 per cent had no earnings to retain.

There is a close correlation between the desire to use earnings for expansion and the strong preference for wholly-owned foreign operations. Of our 72 respondents, 47 (or two-thirds) expressed a preference for wholly-owned operations abroad, and 20 per cent preferred majority control at least. Half (38) had generally succeeded in fulfilling their preference for 100 per cent owned operations; the 9 failing to do so joined those seeking majority control in generally requiring at least a majority position abroad. Specific data on the ownership of 82 foreign subsidiaries of these 72 companies showed 9 of 10 selling subsidiaries as wholly-owned, 8 of 12 extractive subsidiaries as wholly-owned (only 2 minority-owned), and 38 of 60 manufacturing subsidiaries as 90-100 per cent owned by the U.S. corporations. Of the 22 manufacturing subsidiaries not wholly-owned, only 4 were minority-owned and 6 owned 50:50.

Asset reserves, or reserves for depreciation or depletion, were considered a significant source of capital expenditures by 35 per cent of the respondents.

Only 10 per cent of the companies indicated that equity financing in the host country was important; this is again a reflection of the preference for wholly-owned operations. But local borrowing was reported as a major source by half the respondents; the other half was divided between those obtaining only small loans and those obtaining none abroad. The demand for local funds is stronger where there is rapid inflation and exchange control. Despite high interest rates in many developing countries, only a few of our respondents feel that dollar contributions are better than local borrowing.

Parent's initial equity (usually in the form of dollar contributions) was usually kept to a "minimum" and dollars were not contributed later. U.S. dollar contributions were increasing for only two companies. An additional source of U.S. funds is equipment or purchase loans by the parent to the foreign company; these were considered significant by

39 per cent of the companies. A few companies capitalize these loans once they reach a certain level, but the more frequent use is to obtain rapid, tax-free returns from the subsidiary. If high profits are expected, over and above those needed for reinvestment, rather than increase equity capital by a large initial contribution of dollars, the parent will extend a loan to the subsidiary. It is quickly repaid out of earnings but is an expense on the subsidiary's books and not taxed abroad; nor are the receipts taxable in the United States, being a repayment of debt. Such loans, therefore, are not a long-term capital contribution but are an important additional source of financing.

In sum, the approach to expansion within the United States has been extended abroad: reliance is placed largely on retained earnings, reserves, and local borrowing. U.S. dollar contributions are kept to a minimum and are generally employed only to the extent that foreign law requires or other sources of funds are not available.

In an attempt to calculate roughly the catalyzing effect of the dollars which are invested abroad, we asked our respondents to indicate the degree, if any, that book value (original equity or purchase price) underestimates the current market value of their outstanding private foreign direct investments. Of our 72 respondents, 17 asserted that book value was approximately equal to current equity or market value; for many of these, major operations were too new to show a substantial difference. Eleven companies did not answer the question. The remaining 44 indicated that equity or market value was "much," "considerably," or "many times" greater than reported book value; half of these companies gave ratios from 2 to 7 times book value, and published evidence shows that in many instances the ratio rises as high as 10 times.

If we take a median figure of 4 times book value for the 62 per cent stating that equity value was larger, add in the 23 per cent stating that the two values were equal, and count the 16 per cent not answering as only the average of the others, the total outstanding investment at market value would aggregate well over 3 times the reported book value of investments of U.S. funds. In general, then, an investment of \$1.00 (U.S.) has led to additional equity capital formation by U.S. investors of at least \$2.00 (equivalent). To this must be added the capital set aside for depreciation and local resources which have been channeled into the enterprises. According to the recent survey by the Department of Commerce, U.S. funds contributed only one-fifth of the total used for capital expenditures, inventories, etc., abroad during 1957 and 1958—excluding Canada, where proportionately larger dollar contributions were made.

Nonfinancial Investment. In the view of many foreign governments and companies, U.S. nonfinancial investment is equally if not more significant than capital in accelerating economic growth, by making the

use of capital and labor more efficient. There are many means of making nonfinancial investment, including the intercompany transfer of personnel, the provision of executive services under a "management contract," the transfer of rights to use patents and trade-marks under a license agreement, the extension of technical assistance under a contract, and the provision of sales and advertising ideas or copy.

One-fourth of the 72 companies replying to our questionnaire on investment indicated that they do not employ any Americans in their operations abroad. Half indicated that they use foreign nationals to the "fullest extent feasible," and the remainder employed Americans in various of the managerial classes. Although there is much that can yet be done to raise foreign nationals to levels of responsibility, most of the U.S. companies we investigated are making efforts in this direction because: good talent is scarce at home, it is difficult to repatriate a top-level man to a similar position in the domestic company, and the sending of ineffective personnel is more costly than training local men. This investment in personnel is not shown in the financial statistics, and we have no quantitative measures of its results.

But returns from the other nonfinancial investments in the form of management services, sharing of research and development, and transfer of proprietary rights have recently been quantified by the Department of Commerce. It received information from 650 U.S. companies indicating that the returns for these services amounted to about 400 million dollars in 1957. The largest of these earnings arose from foreign license agreements extended to both associated and independent companies. But this does not include royalties retained abroad nor those paid to U.S. foreign subsidiaries for licenses they have extended and which the U.S. parent in turn receives as dividends. Thus the earnings of all U.S. companies from managerial and engineering services and licenses may aggregate 500 million dollars per year. Using an average royalty of 5 per cent of net sales (which seems to be widely accepted in the trade), the aggregate value of sales abroad of items under such contracts would be about 10 billion dollars; we have no comparable data on sales of products by U.S. subsidiaries or associated companies abroad; in any event, there would be considerable double-counting of items produced by these companies under licenses.

An investigation of the licensing programs of 207 U.S. corporations made by the Patent Foundation of George Washington University indicates that 166 of these companies license most of their foreign subsidiaries or associates (see Table 1).3 (Some subsidiaries are given the

⁸ Results of a preliminary questionnaire were published in the *Patent Trademark*, and *Copyright Journal of Research and Education*, June, 1958, and some subsequent results were published in the *Conference Supplement*, 1959, p. 109.

TABLE 1 DISTRIBUTION OF FOREIGN LICENSE AGREEMENTS, ACCORDING TO EQUITY INTEREST IN THE LICENSEE, AS REPORTED BY 207 U. S. COMPANIES, DURING 1957 AND 1959

	EQUITY INTEREST IN LICENSEE							
Range of Licensees	100%		51-99%		Under 51%		Independent	
Per Firm	Number of U. S. Firms	Total Licenses	Number of U.S. Firms	Total Licenses	Number of U. S. Firms	Total Licenses	Number of U. S. Firms	Total Licenses
0 1- 5 6- 10 11- 15 16- 20 21- 50 51-100 Over 100	11 5 4 6	0 150 93 66 71 182 0 261	117* 44 3 0 1 0 1	0 66 26 0 16 0 64	83 66 7 6 0 3 1	0 130 51 77 0 62 54 0	36 80 36 16 10 17 6	0 217 290 205 184 479 353 1,004
Totals	166*	823	166*	173	166*	374	207†	2,732

same rights or information without the signing of a formal agreement.) These companies have 823 license agreements with wholly-owned subsidiaries, 173 with majority-owned subsidiaries, and 374 with other associated companies.

In comparison, these 166 companies, plus 41 which have no affiliated companies abroad, have extended 2,732 such agreements to independent companies abroad. Commerce data indicate that only 140 million dollars was returned to its 650 companies from unaffiliated companies abroad under license agreements, compared to 240 million dollars for licenses and other services extended to affiliated companies. Our responses would suggest that the former figure should be relatively larger since two-thirds of the total agreements represented in Table 1 were with independent companies. The discrepancy could arise from the retention of receipts abroad or from a sizable return from subsidiaries not under licenses. But our investigations indicate that most subsidiaries are licensed and that relatively little is returned to the parent other than as dividends or royalties. However reconciled, these data indicate that there is a large flow of nonfinancial direct investment under license agreements with foreign companies which must be counted as a stimulus to economic growth abroad.

The advantage to the host country from these agreements is that the licensee ties into a large-scale research operation by the U.S. licensor and yet can pick and choose among the products or ideas which suit

Grand Totals: 207 U. S. Companies; 4,114 Foreign Licenses.

* Excludes 41 U.S. licensors who reported having no subsidiaries or associates abroad.

† Includes 41 U.S. licensors who reported having only licensing arrangements abroad.

Source: The Patent, Trademark and Copyright Journal of Research and Education, George Washington Univ., Conference Number 1959, p. 109, with additions.

him, paying royalties on only those he uses. For example, DuPont spends annually some 85 million dollars on research and development; its new Delrin cost 40 million and ten years to develop. Many other U.S. companies are spending upwards of 20 million dollars a year in the same way, with the result that foreign licensees obtain permission and the know-how to produce insecticides, drugs, electronic equipment, machinery, etc., long before they would be able to develop similar products of their own.

The advantage to the licensor comes most directly in the form of royalty payments. It could be expected that the six largest licensors as shown in the accompanying table would have substantial returns, but these and others do have foreign licensing income in seven and eight digits. One small pharmaceutical company has receipts of 2 million dollars from licenses abroad, which amounts to 40 per cent of the net income of the company. Additional returns are obtained through sales of component parts to licensees, and through sales of complementary items in the line either through the licensee or through other distributors, as market information on the licenser's line of products is increased. For some licensors, the return of improvements in the product and patent licenses from the licensee abroad on new developments are also significant; but this gain is apparently not large as yet.

Additional insight into the importance of licensing can be gathered from statistics furnished by the Japanese government on its foreign remittances. During the years 1951-57, royalties on foreign licenses were paid in a total of 123 million dollars (equivalent) compared to dividends on foreign investments of only 24 million. The Japanese government reported a total of 780 licensing agreements with foreign companies in March, 1957, of which 509 were with U.S. corporations; a report by the Japanese Ambassador indicates that two years later Japanese firms had 916 such foreign contracts, 612 with American companies. In 1958, earnings on the 180 million dollars of U.S. direct (capital) investment in Japanese companies dropped to 11 million from 27 million in 1957, but royalty remittances to U.S. companies rose from 27 million to 30 million. There was, therefore, a greater stability in royalty returns than in earnings on investment or in dividend remit-

	U.S. Direct (Capital) Invest- ment	Earnings	Rate	Remit- tances	Remit- tances to U.S. on Licenses	Estimated Average Rate	Estimated Value of Sales Un- der U.S. Licenses
1957	\$180	\$27	15%	\$12	\$27	5%	\$540
1958	181	11	6	3	30	5	600

misdirected. In fact, foreign entrepreneurs have frequently voiced the view that it is not capital which is scarce abroad (particularly in Europe) but ideas. Some encouragement should be sought for the transfer of skills and rights under license agreements. And since many U.S. companies find that lack of personnel is a more serious bottleneck than lack of capital, efforts must be directed toward training more (and better) U.S. citizens to go abroad, toward improving corporate personnel policies, and toward accelerating executive and technical training abroad.

Where capital is needed abroad, the lack of U.S. dollars is not the major obstacle to increased direct investment. Rather, in two senses, it is the lack of non-dollar currencies: first, in the sense that local capital is not readily available in the less-developed countries for borrowing by U.S. subsidiaries abroad and, second, in the sense that U.S. companies entering the foreign field attempt to keep the dollar contribution low and also tend to count foreign-earned funds as "risk capital" to be utilized further abroad.

A corollary policy implication, then, is that an important encouragement to U.S. direct investment can be made through the extension of local currency loans by the U.S. government to U.S. subsidiaries abroad. Another implication is that any technique that raises the amount of foreign earnings which may be reinvested in foreign enterprises will accelerate the rate of growth abroad. Two techniques aimed at this objective have been proposed: one is that of tax exemptions extended by the U.S. government for investment in approved projects in selected foreign countries; another is the permission to create a foreign business corporation in the United States to receive income from foreign operations and to be accorded a deferral of taxes until dividends are paid to the U.S. parent.

These same rights of tax deferral are accorded by some other countries to companies operating almost wholly abroad. A number of U.S. corporations have recently established "foreign base" or "tax haven" companies abroad. We will, therefore, not be able to stop the non-return of foreign earnings when it becomes economically important for the U.S. company to keep them abroad; it may be advantageous for us to permit the same actions from within the United States.⁴

Although it is the expressed policy of the U.S. government to encourage direct investment abroad, we should not be sanguine about the results of this action. Problems of adjustment in trade and payments will arise since continued contributions of U.S. capital and skills will cause

⁴For additional thoughts on tax incentives see my testimony presented to the House Ways and Means Committee, *Hearings on H.R.5*, "Foreign Investment Incentive Act," 86th Cong., 1st Sess., July, 1959, pp. 481-88.

comparative advantages to shift. In the short run, there will probably be increased competition in the U.S. from low-wage countries as larger capital formation and U.S. know-how reduce differentials in labor productivity but wages lag behind. In the long run, differences in wages and living standards will undoubtedly diminish, but in the meantime, adjustments to increased imports of competitive products will be required on the part of the United States. If we do not permit these imports, export earnings of the developing country needed in their over-all development will not rise sufficiently to substain the desired growth rates.

Before we yield to pressures to prevent rising imports from low-wage countries, we should consider the alternatives. We will not be able to stop the growth of foreign industry. The developing countries will eventually obtain capital and know-how from Europe or the Soviet bloc if we do not provide them. The question we must answer, therefore, is whether it is better to have a more rapid growth abroad with our assistance at a cost of more rapid adjustment at home or a slower growth without our help and a slower domestic adjustment. Unless the government takes positive steps to prevent private U.S. capital and know-how from flowing abroad, they will go, but not necessarily in the amounts and directions which will give maximum support to U.S. foreign economic policy. The pressures of competition from European and other American companies are so great now that many U.S. enterprises are literally "jumping" into operations abroad (mainly in Europe and Latin America) just to get a foot in the door.

This widening activity of U.S. corporations raises the third policy problem: that of the role of the international corporation. The new international corporate relation most frequently involves 100 per cent ownership rather than agreements among potential competitors, and the license agreement, while not usually between competitors, does control the marketing of potential competitors. These developments raise a possibility of conflict between the public and private interests as evidenced by the concern of both the U.S. and foreign governments over the potential impact of the international corporation on market competition, concentration of management and control, and centralization of research and development.

The Antitrust Division of the Justice Department has been giving close attention to foreign operations. There is a feeling among many U.S. companies that the only sure way to remain above suspicion of anticompetitive action abroad is to avoid a situation in which a conspiracy could arise; that is, to own the foreign enterprise completely.

The preference for 100 per cent ownership by U.S. interests runs counter, however, to the expressed desire of the foreign_governments

for joint ventures and larger control by nationals. This desire is based on the real concern that centralized control from abroad will prevent actions by the subsidiaries which might be in the national interest of the host country. Though there is evidence that a high degree of local autonomy is permitted foreign subsidiaries, the existence of a central financial control and of territorial divisions under license agreements leads to questions as to whether the appropriate criteria are applied to decisions on: what products will be produced where, which will be exported and to what countries, and what types of managerial and technical operations will be located in the various countries.

A growing concern is evident also in the questioning by Japan, Canada, and France of whether it is desirable from the national viewpoint to have research and development centralized in the United States. Economies of scale seem to make it desirable for the international corporation to centralize its R&D efforts if not in the United States, at least in only a few locations. But the strategic interest of some nations may not be served in this procedure.

In sum, in its efforts to accelerate the development of free world economies through investment, the United States will have to turn its attention not only to the outflow of U.S. dollars but also to the availability of other capital sources (including retained earnings) and to the transfer of managerial and technical know-how. But we have not as yet developed a clear and positive policy as to the role we want direct investment to play. This indecision is reflected in the new fear of dollar outflows and in the current arguments over whether and how to encourage the outflow of direct investment, which we say we desire, and in the contradictory attitudes of the State and Justice Departments toward foreign operations of the international corporations.

Whether or not we act on these problems, U.S. direct investment abroad will expand (but not necessarily where we want it) and problems of adjustment in international trade and payments will arise. They will require enlightened solutions if the benefits of the foreign investment are not to be thrown away.

THE REVIVAL OF INTERNATIONAL CAPITAL MARKETS

By Paul Meek Federal Reserve Bank of New York

The development of world capital markets appears to be reaching the stage where they can make a significantly greater contribution to world economic growth and trade. Private international lending and investment in foreign securities already have regained, if they have not surpassed, the dollar volume achieved in the twenties. More importantly, the groundwork has been laid for the healthy development and future growth of international capital markets. The expansion of the world economy and the restoration of a growing number of countries to positions of external balance and adequate international reserves together have made possible the rehabilitation of past debts and some easing of controls over capital movements. Barring the intervention of war or other major disturbances, world capital markets give promise of being able to play an increasingly important, though not predominant, role in the movement of capital internationally.

The role of private capital markets in the postwar growth of the world economy has to date been limited—to the regret of some, but the surprise of few. The aftermath of war initially posed too stark a challenge to the faith of the portfolio investor in the future of the international political and economic order. In the devastated areas, only government, activated by political objectives, could make the massive commitment needed to restore economic and political health. Private direct investment did, however, move into other areas to provide the fuel and raw materials required for reconstruction and North American expansion.

Today, the reviving capital markets appear narrower in scope than in the past, but this reflects in part the emergence of new institutions on both the supply and demand sides of the markets. Once, the markets supplied capital directly to developing countries, as individual investors bought their high-yielding securities. Now, there is little appetite for such offerings on the part of the institutional investors which supply a major share of the funds flowing into the capital markets. Yet a sizable volume of capital is being channeled to developing countries through the International Bank (IBRD), which affords the investor the protection of its own independent judgment and capital resources. Such specialized financing institutions provide much-needed links between the expanding capital markets and the less-developed countries. Providing a greater

flow of capital to less-developed countries remains one of the principal challenges facing the further development of these markets.

World capital markets can make their contribution to trade and economic growth by promoting international specialization and by providing long-term financing of economic growth. Capital markets leave the borrower reasonably free to spend a large part of his proceeds wherever his requirements are most fully and economically met. Moreover, they offer a channel for mobilizing the long-term capital appropriate for financing projects with a long pay-out period. All too often in the recent past medium-term export credits have been used for such purposes, resulting in the overcommitment of some borrowing countries to short-term debt repayment.

The United States, in particular, has an interest in expanding the role to be played by world capital markets. In the interests of international specialization our exporters should be free to compete in the growing markets which will be financed by the increasing volume of world savings. To date other countries have been using credit extension largely to promote their own exports—a practice no longer justified by exchange reserve considerations. Movement toward freer capital markets abroad might well give a fillip to United States exports and contribute modestly to reducing the present large cash deficit in the United States balance of payments. United States policies should give greater attention to this possibility, this paper will argue, since an increasing part of the supply of international capital is likely to come from outside this country.

I. The Growth of Private Portfolio Investment

Private foreign investment through security purchases and bank loans has scored significant gains in recent years. In 1958 foreign flotations in leading world capital markets reached a postwar high of perhaps 1.3 billion dollars. This was on a par with the volume of the late twenties and was about one-third the 4.3 billion dollar average annual outflow of long-term private capital recorded for the main capital-exporting countries during 1955-58¹ The total portfolio outflow in 1958 was probably above that achieved in the twenties, for almost another 600 million dollars in long-term bank loans and purchases of outstanding securities were recorded in that year for the United States alone.

The United States capital market has played a major role in this reactivation of portfolio investment but other capital markets have been growing in importance. In 1958, the United States absorbed almost

¹United Nations, Department of Economic and Social Affairs, *The International Flow of Private Capital*, 1956-58 (E/3249) (New York, 1959), p. 9. This study is a basic reference on which the present paper draws heavily.

1 billion dollars in new foreign issues, compared with just over 200 million in Commonwealth issues taken up in London and another 33 million in Switzerland. The revival in activity is, however, much more broadly based than these figures suggest. During 1959, foreign issues floated in European capital markets have probably been almost as large as foreign flotations in the United States market. Movements of portfolio capital within Europe have also contributed to a reduction in the spreads between interest rates, and to some extent stock yields, in national markets.

The recent United States outflow of private portfolio capital has taken place chiefly through the purchase of foreign dollar bonds but purchases of foreign stocks have also been substantial and mediumterm bank lending has been significant. Institutional investors—pension and trust funds, savings banks, and life insurance companies—have bought heavily the bonds of Canada and the IBRD, which each raised about 350 million dollars in 1958. Individual investors, of course, took up most of the 50 million dollars in Israeli bonds sold. More noteworthy from the standpoint of the broadening international capital market was the offering of 260 million dollars in bonds in this market during 1958 by governmental borrowers in eleven other countries. Another nine governmental and three corporate issues have been offered in 1959. However, foreign purchasers have been chiefly responsible for the market success of these issues, taking almost two-thirds of the 1958 issues. United States investors have been showing more interest in such issues, but the attractiveness of alternative investment outlets combined with unpleasant memories have sufficed to limit their participation to modest proportions.

On the other hand, American investors have turned with considerable enthusiasm to foreign equities as domestic stock prices have risen irregularly throughout the fifties. Canadian stocks have always drawn considerable participation by Americans and a number of special nonresident-owned investment companies have provided a familiar medium for such investment since 1954. That same year saw a surge of interest in European stocks of an international "blue chip" character, particularly those of resource oriented companies in the fields of petroleum and mining. As the European economy has grown and controls over security transactions have been eased, investor interest has broadened to include leading concerns in France, Germany, Italy, the Netherlands, South Africa, and the United Kingdom, In 1958 Americans bought 240 million dollars in corporate stock in Europe, 30 million in South Africa (largely through a new investment fund), and 60 million in Canada. Purchases have been running at an even higher rate in 1959. Individual investors have continued to play a leading role though investment trusts have become large purchasers in recent years. The listing of foreign companies on the New York Stock Exchange and the development of specialized brokerage and banking facilities have contributed to, as well as resulted from, the growing volume of transactions. Foreign companies have been able to float both debt and equity issues in the United States market. Further large-scale offerings appear to wait only upon foreign companies to become willing to meet our tougher registration requirements.

Portfolio lending by United States banks has been modest but growing with loans of over one year totaling 1.4 billion dollars at the end of 1958. Such lending is the natural outgrowth of foreign trade financing and of the domestic services provided foreign depositors who maintain commercial working balances and official exchange reserves in New York. A sizable share of bank lending has been to foreign governments, frequently to strengthen exchange reserves and on occasion to refinance accumulated short-term trade credits. Banks have also bought the maturities of IBRD and Export-Import Bank loans as well as some of the shorter foreign bonds floated in the New York market. Mediumterm bank lending, in contrast with most other portfolio investment, has been directed to a considerable extent to the less-developed countries, particularly in Latin America.

Only recently have European governments been able to permit the easing of controls over capital movements necessary to the revitalization of a truly international capital market. Most of them still effectively regulate the flotation of new foreign issues to see that domestic capital requirements are satisfied before others are granted access to the national capital market. Still, the great improvement in the foreign exchange positions of most of the developed countries has enabled them to allow a growing volume of foreign offerings and to allow their own residents greater freedom in the purchase of securities in other markets. The reopening of channels between national markets has led to increased trading in foreign equities and to the rapid spread of new mutual funds to carry it on. The rapid strides made of late in extending the geographic scope of world capital markets should not obscure the fact, nonetheless, that a number of European countries have already been making available a substantial volume of medium-term export credit for some time.

The United Kingdom, Switzerland, and West Germany provide the principal European markets for new foreign issues. Such flotations on the London market averaged 185 million dollars in 1954-58 compared with over 500 million between 1920 and 1930.² New issue activity in Switzerland has far surpassed the pace of the twenties and may reach

² Ibid., pp. 56-54.

140 million dollars in 1959. The IBRD has been a major borrower (140 million dollars) in the Swiss market and United States and other foreign corporations have also borrowed there. The German capital markets have absorbed several foreign issues since late 1958, reportedly the first since 1914. Notable among these was a DM 200 million (47.3 million dollars) IBRD bond issue but European issues have been floated as well. The Belgian capital market subscribed to a 10 million dollar IBRD offering in early 1959.

Despite this progress the market for new issues abroad remains somewhat hemmed in by controls and uncertainties as to shifting official policies. Access to the London market has been limited almost exclusively to Commonwealth countries and even the offerings of these countries have been harder hit than domestic issues by the restraints imposed by the capital issues control. The Swiss market was completely closed to outsiders for two years before the reopening in 1958. The Dutch market has been closed to new foreign issues since 1956. The Italian and French markets have not been open to foreign borrowers since the war. Other European countries as well as Japan and Canada have been in world capital markets chiefly as borrowers, not suppliers, of funds.

The interconnections among capital markets have been greatly strengthened in the last year or so. The importance of foreign subscriptions to the success of foreign dollar bond flotations in the United States has already been noted. Foreign stocks have been newly listed on most of the national stock exchanges. A number of new investment trusts have been formed by European banks to invest in securities of the Common Market. German investors, in particular, have bought heavily in other European markets, their total purchases of foreign securities exceeding 200 million dollars in the first half of 1959. Despite the restraints remaining in most European countries on purchases of Amèrican securities, Europeans purchased 220 million dollars in the first nine months of 1959, largely through Switzerland.

European countries have for some years been providing through medium-term export credits a flow of capital probably about equal to that which is only now taking place through the organized capital markets. A sizable share of such credits has gone to less-developed countries—a group that has obtained little directly from the capital markets. Governments have taken the lead in insuring or financing such credits but private sources have provided a large share of the actual credit extended. In the United Kingdom almost 250 million dollars annually flowed in 1956-58 on average into medium-term credits guaranteed by the government against commercial and political risks.³

³ Ibid., pp. 70-71.

In West Germany the Ausfuhrkredit A. G. (AKA), a consortium of twenty-eight private banks, financed export orders of almost 1.6 billion dollars over the six years 1952-57 in co-operation with exporters and other financial institutions. In France the volume of activity has evidently reached similar proportions, but most of such paper written by commercial banks seems to have gravitated to the central bank. Austria, Italy, and Sweden within Europe and Australia, Canada, and Japan outside of Europe have also developed export credit programs. European banks have also been active on their own account in overseas financing in South Africa and elsewhere. While firm figures are lacking, it appears that perhaps the major part of the capital which countries outside the United States have been providing has been linked to the promotion of their own exports.

Fragmentary national data make it hard to assess the breadth of developing world capital markets, but the important gains being made are evident in the growing success with which the World Bank has tapped world markets. About three-quarters of the 2.4 billion dollars which the IBRD raised in its first thirteen years came from thirty-one public issues in seven foreign countries: fifteen in the United States, seven in Switzerland, three in Canada, two each in the Netherlands and in the United Kingdom, and one each in both Belgium and West Germany. Private placements outside the United States accounted for the remainder, and recently one 100 million dollar issue was placed with sixtytwo institutional investors in thirty-four different countries. While by far the greater part of the Bank's obligations are denominated in dollars, about half of the 1.9 billion outstanding on June 30, 1959, was held outside the United States. In fact, in the 1958-59 fiscal year as interest rates rose in this country and declined abroad, the Bank was able to borrow outside the United States market over three-fourths of the 432 million dollars it raised.

The Bank has increasingly been able to replenish its resources by selling the shorter (up to seven-year) maturities of its own loans, principally to banks but with investment houses, corporations, and pension funds also purchasing on occasion. Almost 600 million dollars in such sales had been made by the end of June, 1959—more than half of them abroad. A significant portion of the loans sold have been loans to less-developed countries in Africa, Asia, and Latin America. Virtually all of the sales in recent years have been without the Bank's guarantee. A large proportion of all new Bank loans now involve the sale of the early maturities at the time the loan is made. Joint operations with other lenders have also been growing in importance. In its last fiscal year

⁴ Claudio Segre, "Medium Term Export Finance—European Problems and Experience," Quarterly Review of the Banca Nazionale del Lavoro, June, 1958.

the Bank loaned 100 million dollars to five borrowers that were able to raise an additional 175 million in the United States capital market and 20 million from the European Investment Bank.

The Bank's success in mobilizing international capital has rested primarily upon the implicit guarantee of its obligations by the United States government and secondarily on the strength of its management and the unblemished performance of its borrowers in servicing their obligations to the Bank. The guarantee (up to the capital subject to call from the United States) has undoubtedly been controlling with most United States investors and with the state legislatures which have passed laws enabling insurance companies and others to invest in World Bank bonds. It has also weighed heavily in the decision to increase the Bank's authorized capital from 10 to 21 billion dollars effective September 15, 1959, with a rise of the capital subject to call from the United States from 2.5 billion to 5.7 billion. Nevertheless, the Bank's fine reputation based on 4.4 billion dollars in loans extended without default has also been important. Its success in selling its loans without its guarantee as well as in lending in concert with the capital markets attest the high regard in which the IBRD is held as a financial institution in its own right. Its offspring, the International Finance Corporation, has this year also been able to attract private U.S. financial participation in its own operations.

II. World Capital Markets, Trade, and Economic Growth

The economic foundations have been laid for the further development of the capital market mechanism to play a more important part in the growth of international trade and economic activity. To date, it has been economic expansion and the revival of trade, financed through other means, that have created an environment in which capital markets have taken on new life and moved beyond national frontiers. Only recently has the prospect emerged clearly that world capital markets are developing sufficient vitality to make an increasingly significant direct and independent contribution to world trade and growth. The United States market has already been contributing importantly to this end through the purchase of Canadian, IBRD, and other issues. The growing flow of savings being generated in other industrial countries provides an opportunity for capital markets there to make a growing contribution of their own. At present, the challenge is whether governments will promote the use of this mechanism and seek to devise special means for channeling capital through it to developing areas.

Both the resurgence of the world economy and the return of many national economies to viable external balance have been basic factors in the revival of international portfolio investment. Both have contributed directly to greater investor willingness to take on foreign commitments. Both are manifest in the growth of international liquidity. Both have facilitated the settlement and servicing of old debts. Growth and external balance do not of course always go hand in hand, and where growth has been pursued at the expense of external balance, the private security purchaser or lender has usually refused to follow. This is perhaps the chief reason why portfolio capital flows today chiefly between the more developed countries where investor confidence has been strengthened by the success of neo-orthodox fiscal and monetary policies in correcting external imbalances when they arise.

The improvement in international liquidity has been of crucial importance to the increased international movement of private portfolio capital. To the buyer of securities, the level of a country's gold and foreign exchange holdings is a more sensitive barometer of the economic weather than industrial output or national income. The well-known reserve gains of the non-Soviet countries in recent years have not been general but have been concentrated in industrial areas outside the United States. Between the end of 1950 and of 1958 Western European countries alone gained 11.5 billion dollars according to the IMF, while the United States and most of the less-developed countries lost reserves. It comes as no surprise to find that the reopening of channels between national capital markets involves almost exclusively the industrial countries which have gained reserves and have rather well-developed capital markets.

Progress in rehabilitating the obligations issued on world capital markets before the depression has likewise helped revive confidence in the capital markets. World economic expansion has both restored the capacity to service old debts and greatly increased the demand for new capital. At the present time only two of over forty countries which have issued dollar bonds (excluding the Soviet bloc) remain in default: Greece and China. Of course, the process of debt settlement itself has sometimes done little to restore investor confidence in a debtor's respect for his obligations. Bondholder acceptance of the terms offered in a "salvaging" operation has not automatically restored the debtor nation to the queue of worthy borrowers. Here again one finds that it is the developed countries which have rebuilt their reputations as "credit worthy" through their performance on old obligations. The pall cast over the obligations of less-developed countries by the overpromotions of the twenties and the defaults of the thirties has not yet been completely dissipated.

The reactivation of international capital markets bespeaks the progress made in convincing investors that governments not only are currently able to honor their commitments and those of their citizens but also intend to preserve their ability to do so in the future. Such assurance depends not so much on the level of exchange reserves as on

the belief that those directing a country's economic policies can and will deal resolutely with any imbalances in its international payments. The record of the recent past has reassured the private investor in foreign securities on two scores. The effectiveness of anti-inflationary fiscal and monetary policies in achieving or redressing external balance has been demonstrated on numerous occasions. Whatever misgivings may still remain in some quarters about the short-run impact of such policies on economic growth, their usefulness in relieving excessive exchange pressures cannot be gainsaid. Second, an increasing number of countries have shown themselves ready to protect their international reserves by prescribing such policies. Neo-orthodox economic policies have enjoyed a revival of their own, being adopted at various times by most of the developed countries including France, Japan, the Netherlands, the United Kingdom, the United States, and West Germany.

The performance of the less-developed countries, once again, has not generally inspired the confidence of the portfolio investor who has neither the potential gain nor the direct control of the direct investor to entice him. A growing number of such countries, it is true, have embarked upon stabilization programs designed to shore up their economies and exchange reserves with the help of the IMF. Yet, developing countries, needing capital, typically try to hold their exchange reserves to a minimum even though the cyclical fluctuation of primary prices virtually assures recurring exchange crises. Moreover, there is understandable pressure in such countries to press developmental efforts up to, if not beyond, the limits of their available resources. The prevalence of this openthrottle philosophy serves to confine the private investor's interest to other areas.

The industrial countries outside the United States have the most to contribute to the further development of international capital markets. They are likely to supply much of the growth in the supply of "international" capital as the unusual capital requirements of reconstruction cease to be a charge against the swelling flow of their domestic savings. Long-term interest rates in most European countries have already moved downward from the high levels of 1957 while United States rates have been rising. With European exchange reserves now much more ample. Europe should be able to finance on a sounder long-term basis through the capital markets the capital goods exports heretofore aided by special medium-term credit facilities. Short- and medium-term credit could then revert to their more appropriate role of financing trade and working capital requirements. The enlarged flow of capital resulting would move chiefly between the industrial countries. Indeed, the narrowing of interest rate differentials internationally indicates the growing connections between developed national capital markets. Within the industrial areas interest rates already seem to be performing in

some degree their traditional function of channeling resources to developing areas like Australia, Canada, and the Union of South Africa.

Private portfolio investment has taken on new life at a time when the less-developed countries have demonstrated their physical capacity to absorb larger and larger amounts of capital. At present they have little direct access to capital through such channels. Such additional resources as they do obtain come through the intermediary of the International Bank or of international companies which help finance their direct investments through resort to such markets. Less-developed countries have, however, relied heavily on medium-term export credits in financing the import of capital goods required for development, often undertaking to meet heavy fixed charges in a relatively short period. Enough balance-of-payments crises have resulted from, or been aggravated by, this procedure to reaffirm the desirability for both lender and borrower of financing long-term projects with long-term funds. How might the capital markets provide a greater volume of long-term investment funds to less-developed countries?

The International Bank, with its enlarged capital, should be able to channel a growing stream of funds to developing countries, especially if the more developed countries are encouraged to raise capital directly rather than borrowing from the Bank. More and more as the industrial economies have grown able to finance their own growth, the Bank has become a bridge between developed capital markets and developing economies. Almost three-fourths of the 1.4 billion dollars in new loans extended by it in its last two fiscal years has gone to Africa, Asia (excluding Japan), and Latin America. The new regional institutions, the Inter-American Development Bank and the European Investment Bank, may be able to emulate the IBRD's methods and in time float their own bonds as their charters authorize them to do.

Another possibility is that the principles of export credit insurance might be adapted to make it possible for some less-developed countries to float issues directly in world capital markets. The implicit United States guarantee behind IBRD bonds has been, after all, the key factor in the success of IBRD issues in world markets. The risks are certainly of the politico-economic sort that require governmental resources, yet have proved manageable in export credit. If flotations of the developing areas were insured against default by national or international agencies, private funds might become available for less-developed countries at a high, but not prohibitive, rate of interest as they have for export credits to those areas. For their part such countries might be willing to pay an insurance premium and fairly high interest rate for an important marginal addition to resources. Such a supplement to other means of channeling resources from the developed to the less-developed areas might be worth exploring.

III. Implications for the United States

The further development of world capital markets might well contribute modestly to the resolution of a basic dilemma now facing United States foreign economic policy: how to maintain the flow of United States assistance to the less-developed areas and still reduce the large cash deficit this country has been running in its balance of payments. The cash deficit itself has been, of course, a major factor in the growth of international liquidity, enabling the rest of the world to add 3.4 billion dollars to its gold and liquid dollar assets in 1958 and probably somewhat more this year. This build-up has, however, been so rapid as to cause concern lest an indefinite continuation of this pace threaten in time the stability of the international dollar exchange standard that now facilitates international trade and payments.

Basic to any reduction in the United States cash deficit must be an improved export performance. As is well known, the large cash deficits of 1958 and 1959 have resulted in large measure from a fall in our export receipts while our outpayments for grant aid, foreign investments and imports remained high. The increase in United States private long-term capital abroad between 1956 and 1958 may have contributed marginally to a widening of the deficit in 1958, but this influence was reversed in 1959 as U.S. interest rates rose relative to foreign rates. Boosting United States exports depends not only on our exporters becoming more aggressive and competitive in foreign markets but also on the reduction of foreign barriers to keep out this competition. Moves to reduce quota and tariff restrictions might well be supplemented, however, by efforts to move other countries toward freer capital markets and away from tied financing.

There is something to be said for the view that we have been financing foreign exports as well as our own. The United States has assisted recovery and growth in the industrial countries, not only through military spending, grant-aid and capital flows, but also through financing exports from such areas to each other and to less-developed countries. It is true that the United States has tied Export-Import Bank lending and agricultural export lending directly to U.S. exports. A significantly greater volume of financing, however, has not been so tied. Economic assistance programs, portfolio investment, and direct investment abroad have financed a large amount of offshore procurement. To the extent that other industrial countries have provided financing, it has been very largely tied to their own exports, particularly through export credit. Access to their national capital markets has been limited and restrictions have been imposed upon the use of the 18 per cent IBRD subscriptions.

The United States would seem to be justified, given the improved

position of the other industrial countries, in expecting them to provide a much larger contribution to the flow of capital to the less-developed countries. It is difficult, however, to see how this can contribute importantly to the reduction of the U.S. payments deficit in the first instance if the enlarged flow continues to be tied to exports from these areas. The new International Development Association is one avenue for avoiding this kind of discriminatory linkage, but it and other multilateral agency solutions are going to take time. Greater freedom in world capital markets would provide borrowers greater freedom in choosing their source of supply—and action could be undertaken with little delay. Winning a share of the larger market is the challenge that has to be met by the United States exporter.

The United States might well adapt its policies to encourage the growth of international capital markets. First, the increasing availability of alternative sources of finance should make it progressively easier for the Export-Import Bank—and the IBRD, to the extent its policies are influenced by the U.S.—to reduce their lending to industrial countries. These should be increasingly directed to world capital markets for borrowed resources. Second, official policies could encourage European countries to move toward greater freedom of capital movements and capital issues as well as toward sharing the aid and investment burden and the reduction of trade barriers. Some observers may question whether greater tying of U.S. financing to U.S. exports is appropriate at this time when foreign progress away from such restrictions might well produce much greater benefits. Finally, specific steps could be undertaken. The increase in the IBRD's capital is a move in the right direction, especially since an increasing proportion of its resources are now coming from abroad. Another possibility might befor the United States to take the lead in developing the program mentioned earlier for guaranteeing some flotations by less-developed countries in world capital markets. Risks to the United States government would not be increased insofar as it already furnishes capital itself through the Export-Import Bank or other agencies. Such a program could draw long-term investors into this market as IBRD bonds have already done.

In sum, the industrial countries of the non-Soviet world are confronted with the challenge of whether they will continue to give greater scope to international capital markets in the promotion of trade and economic growth. The United States has a good record of liberal policies in this as well as the trade field. It is to be hoped that it will press on with liberal measures rather than risk an undue prolongation of restrictionism at a time when this country could be a major beneficiary of further progress.

DISCUSSION

ARTHUR I. BLOOMFIELD: As we move into the decade of the sixties, there is ample evidence of the fact that we have already entered a new stage in the postwar evolution of the world economy. The production and trade of Western Europe, and of foreign industrialized countries generally, have reached all-time highs; a large number of foreign currencies have achieved nonresident convertibility on current account and a high degree of resident convertibility as well; the world dollar shortage has disappeared and American exports face increasing competition in world markets; the European Common Market and the European Free Trade Association have been launched; and Russia has stepped up its program of foreign aid and other techniques designed to subvert and win to its side the uncommitted nations of the world. In the less-developed countries, however, progress continues slow and the economic picture remains generally bleak.

In a changing world environment such as this, there has clearly been a need for rethinking and some reshaping of our foreign economic policies and techniques. While there has been definite progress in this direction during the past year or two, the response has as yet lagged, and some measure of uncertainty still prevails in official circles as to how exactly, and how rapidly, we should move.

In perhaps no area of our foreign economic policy has there been more evidence in the past few years of careful attention and thought, within and without the government, than in that relating to foreign aid and investment. The Draper and Straus Reports, as well as studies by the CED, NPA, MIT, and other organizations, have made valuable recommendations in this field; and the three papers on this program, while drawing on this accumulating body of informed opinion, have made some further contributions of their own. The questions that have been engaging the most attention of late relate to how best to enlarge the aggregate flow of developmental capital to the less-developed countries from the industrialized countries of the free world as a whole, the most appropriate forms and channels that it should take, and the best means of enhancing the effectiveness of such aid in the achievement of our basic objectives. It is because each of the three papers is concerned with policy questions such as these that I shall treat all of them together in the brief comments that follow.

I find little room for controversy, and much for agreement, with respect to the various ideas and suggestions advanced by the speakers. I am especially sympathetic with Professor Mikesell and Dr. Meek when they argue that the burden of capital assistance to the less-developed countries should increasingly be shared by other industrialized countries of the free world in view of their enlarged and growing economic capabilities. The recently announced policy of requiring that part of our foreign aid be tied to purchases of American exports might perhaps be interpreted as a means of exerting pressure on those

countries to do precisely that, but let us hope that we have no more of such forms of stimuli.

I am in accord with Mikesell's suggestions for greater continuity and centralization in our aid program, as well as for channeling a larger proportion of our economic aid through multinational institutions—a trend that is already under way. At the very least, I should like to see a growing degree of co-operation between the United States and Western European countries in the planning and co-ordination of their respective aid programs in the less-developed countries. While fully sympathetic with Mikesell's repeated emphasis on the need for greater efforts in our aid program to promote sound economic policies, economic and social reforms, and democratic ideals in the recipient countries, I feel, at least on the basis of my own field experience, that he may have overestimated the rapidity with which we can move in this direction, and may perhaps have underestimated the efforts that we have already made.

I found especially interesting the evidence presented by Behrman and Meek regarding the new and changing forms that direct and portfolio investments have been assuming in recent years, as well as the growing importance of such forms. This suggests, among other things, that the traditional basis for distinction between these two broad categories of international investment is not as sharp and clear-cut as it used to be. I believe worthy of consideration the proposals of Meek for guaranteeing some bond flotations of the less-developed countries on world capital markets, and of Behrman for greater stress on encouraging the transfer of our managerial and technical skills abroad and for an extension of local currency loans by the U.S. government to American subsidiaries abroad.

With regard to soft loans, to which Mikesell refers, the Washington view is that their advantages outweigh their disadvantages. Yet I cannot help but feel uncomfortable, as he does, at the element of deception in this aid device, and especially at the economic and political problems created by the rapidly accumulating volume of local currencies under our control that is occurring under this technique and the related P.L. 480 program. While there is certainly room in our aid program for devices falling between outright grants and hard loans, I believe with Mikesell and others that serious consideration might well be given to some reshaping of this technique, whether in the form of loans involving dollar repayment with very long amortization schedules and waiver provisions, as he suggests, or of flexible provisions for repayment in dollars at the discretion of the United States on the basis of periodic reviews of the recipient country's repayment capacities. In this area, perhaps more than any other, it seems to me that we should maintain a highly flexible posture and experiment broadly rather than run the risk of permitting our aid techniques to ossify into a rigid mold.

With regard to the suggestion of Mikesell and Meek that the burden of capital assistance to the less-developed countries should increasingly be shared by other countries and Mikesell's reference to the need for a free world aid program aimed at supplying all of the capital that the less-developed countries can productively employ, it is not clear to me whether by this they mean that, in the near future at least, the United States should hold its own contribution

relatively steady while the others expand theirs, or that we should increase our contribution but at a slower rate than that of the others, I draw this distinction because it seems to me to have a short-run significance in view of the much-publicized acceleration in the past two years in our cash balance-of-payments deficit, to which reference is briefly made by Meek. Under present conditions, an increase in the aggregate outflow of United States aid and private capital to less-developed countries would, unless offset by a decrease to the more developed ones, tend to add further to the current rate of deterioration in our net international reserve position, even if there were an accompanying increase in the outflow from Western Europe. While I see no cause for undue concern in our present balance-of-payments position, and while forces are at work tending to ameliorate it, nevertheless I would have some reservations concerning the desirability of any measures, especially special stimuli to private long-term capital exports, that might have the effect of causing a significantly increased rate of outflow of dollars in the period immediately ahead, desirable though such measures would be if we look somewhat farther beyond the present. On the other hand, I would welcome efforts further to redirect the flow of our aid and long-term capital exports towards the less-developed countries, provided that they do not in themselves appreciably enlarge the combined total so long as we are losing reserves at the present rate.

EMILIO G. COLLADO: There are in these papers many statements I should like to endorse. From among them all I should perhaps most like to emphasize Professor Behrman's opening remarks that the contribution of United States direct investment to the economic growth of the free world arises from the commitment of real resources, not simply from the United States dollar flows. In the past I have tried to stress the importance of the gross amount of capital expenditures. The gross amount includes not only the dollar outflows from the United States but also the retained earnings and the expenditures from income ascribed to depreciation and depletion. In committing each of these types of funds, the investor abroad usually has the same opportunity to put his managerial, technical, and innovational skill to work. On the basis of figures from the Survey of Current Business, I estimate that gross United States private investment expenditures in all areas abroad last year were about 5.9 billion dollars, while the outflow shown in the balance of payments was only 2.8 billion. Professor Behrman suggested that when investment in Canada is excluded the gross figure is an even greater multiple of the balance-of-payments outflow. Thus he, too, would point to the importance of the gross measure of investment expenditures.

He has, moreover, gone further and educated us all to an added dimension of our total resource commitment to foreign business operation—that involved in licensing agreements and other forms of contractual arrangements. I look forward to seeing his further contribution on this subject when the University of Oregon investment study is published.

Yet I confess to doubts about the practical usefulness of his divison of investment into "financial"—which relates to funds and equipment—and "non-financial"—which relates to people and knowledge. What happens when a

United States investor puts some cash equity into a foreign firm which then spends the cash to buy some knowledge from the United States?

Surely the important thing of which his talk reminds us is that there are many ways in which United States resources can be combined with foreign resources in a manner beneficial both to the United States and to the foreign areas concerned. Investment abroad through loans or equity shares is one way. Licensing and service contracts are another. Still another is the installation in the United States of equipment designed to produce goods for export. And yet another way is to build plant here designed to operate in part on raw material from abroad. All of these are in a broad sense investment of United States resources in foreign business operations. Our economic welfare is maximized when our private investors are allowed to choose—and do choose wisely—which of these forms of investment is most productive in each case.

From my stress on the economic importance of foreign investment decisions I hope no one gains the impression that I am not very much aware of the importance of an aspect stressed by Professor Mikesell; that is, the importance of investment abroad to our national security. I would, however, quarrel a bit with his second sentence, the one to the effect that "most American loan capital no longer flows abroad simply to earn a higher return." Last year the gross amount of new loans made by the United States government was about 1.6 billion dollars. This amount was probably exceeded by the loan component of gross private portfolio and direct investment.

United States investment abroad is certainly strengthening our national security, but the larger proportion of that investment is going abroad simply for sound economic reasons. When a United States businessman recognizes the probability of a larger return from investment in a foreign project, he puts our limited resources to best use by grasping the opportunity. In so doing it seems clear to me that he benefits himself and our economy. Professor Mikesell made one statement, however, which seems to contradict my conclusion. He said that "with few exceptions the increment to our social value product from the use of a given amount of capital at home is greater than the net return after foreign taxes on the same amount of capital" invested abroad. I am far from sure I understand that statement. Perhaps he felt that the additional expenditure at home from the investment at home would bring added returns to workers and others at home sufficient to offset the higher investment return from the foreign venture. But I cannot understand this. Would not the same or higher returns accrue to the United States workers and others from the expenditures in the United States accompanying or resulting from the foreign investment? Perhaps Professor Mikesell was thinking primarily that taxes on the investment return would enter into United States social value product when paid in the United States but not when paid abroad. This, I suppose, is the same argument which is sometimes used in New England against the flow of capital to the South. Yet there are many qualifications. A part of the taxes paid on a domestic investment project are probably for services rendered to the domestic economy by the government at a cost. Also our tax arrangements are often reciprocal and we have benefited greatly from the foreign investments in the United States. I am sure Professor Mikesell had no thought of imposing the full United States tax burden on income from abroad, with no relief for foreign taxes paid. Probably Professor Mikesell would contend—and I would agree with him—that there is no simple and purely economic case for introducing any general tax subsidy for all foreign investment. I do believe, however, that there is today a strong economic, equity, and security case for reforming our taxation of income from abroad to reduce the many arbitrary, formalistic discriminations. In my daily work I am forced to watch the large-scale and continuing waste of an important resource as I see rooms full of business executives applying their energy and intelligence to the task of adjusting foreign investments to the capricious quirks of the tax law.

I sincerely hope that the Congress will in the coming months enact the Boggs Bill in some form.

Because of the reduction in our foreign exchange reserves, some are now arguing that this is no time to carry out a tax reform which would encourage foreign investment. I disagree. As I know from years of personal experience, educating the Congress on the problems of foreign income taxation is a slow process and the proposed legislation is long-run legislation. It would be unfortunate to attempt to adjust the timing of such legislation in the search for short-run balance-of-payments advantage. In the long run, of course, successful foreign investment eases our task of maintaining the external value of our currency.

My impression is that taxes do play an important part in the calculations of investors abroad. It seemed to me, however, that there was an error in Professor Behrman's example of such calculations. I understood him to say that loan repayments by foreign subsidiaries are an expense on the subsidiary's books and are not taxed abroad. I don't know of any country in which this is the case. But, as he does point out, receipts of loan repayments by the parent company are not taxed in the United States as dividends would be. Most investors abroad are aware of this and, rationally, avoid overcapitalizing their foreign subsidiaries. In fact, I question whether the investors are as irrational as Professor Behrman might seem to suggest at various points. It has not been my observation, for example, that investors generally prefer to use funds borrowed abroad if the cost—after taking into account exchange risk—is greater abroad. Neither has it seemed to me that investors are more willing to "risk" abroad a dollar earned abroad rather than any other dollar.

It seems to me that most investors abroad are trying hard to do a good job in an uncertain and complex world. All of us, as citizens, have an interest in how well the job is done. Successful investment directly raises our standards of life, and successful investment also encourages the kind of productive free society in which we can live in the greatest security.

J. RICHARD HUBER: Professor Mikesell has delivered a stirring paper in political and security economy which almost persuades me, but not quite. At least not on all major points. His case for large-scale economic aid from the United States to underdeveloped countries rests chiefly on grounds of military security rather than economic welfare. He rejects the thesis that sustained increases in per capita output foster democratic institutions and political stabil-

ity. Mainly from these two propositions he derives the conclusion: "Foreign aid should be employed as a means of bringing to bear the maximum amount of influence, both economic and political, on the less-developed countries. If the aid-dispensing process is to be neutral regarding sound economic policy, regarding democratic ideals, regarding social welfare, and regarding defense against aggression, then I think it has abdicated its function."

All of us share the hope that the underdeveloped countries will become democratic, but should aid be dispensed only in proportion as this ideal is achieved? If aid is demonstrably helping promote self-generating economic growth, e.g., steady rise in per capita output in agriculture and improved living standards among the masses, should a judgment by the Pentagon that the country is a military liability to the United States be the basis for abandoning aid? Or for drastically changing the impact of the aid in order to build up a large standing army if that should happen to be the Pentagon formula for converting a liability into an asset? To these questions I think the answer should be no.

Securing the common defense is surely a valid reason for transferring American economic resources to foreign lands, but to make defense or security rather than economic welfare the chief test of the effectiveness of our total foreign aid program invites confusion rather than rationality. The economist should provide guidance on how to minimize the economic cost of solving particular security problems. But if one asks the economist whether the common defense justifies an economic aid program of, say, a billion dollars a year to India, he will flounder hopelessly.

The chief test for evaluating the effectiveness of massive economic aid programs, whether unilateral or multilateral, should, in my judgment, be economic welfare of the participating countries. Obviously, however, economic welfare cannot in this context be defined by static equilibrium economics. I do not have a new welfare economics to propound, but some dimensions of the concept can be stated along familiar lines. I take as an example the contribution of the Marshall Plan to the economic welfare of the United States, Here was a massive foreign aid program, conceived largely for economic rather than security goals (indeed, Communist countries were originally invited to participate). How evaluate whether the billions spent were worth while on economic grounds? I cannot do this in detail, but surely the United States has a sufficient stake in an international economy characterized by convertible currencies, multilateral trade, realistic exchange rates, and mild rather than severe restrictions on trade and capital movements, and the general progress of world trade attendant upon economic recovery and progress of Western Europe, to justify in general the billions of Marshall aid. In making the economic case for a big multilateral aid program to underdeveloped countries, a writer in the London Economist recently observed: "The point is that the world will work better for everybody if it is making general progress than if, while some parts are forging dizzily ahead, other parts are falling into misery and chaos."

To his first proposition, that massive foreign aid can be justified only on security grounds, Professor Mikesell joins a second, that sustained increases in per capita output do not necessarily contribute to political stability and

creation of democratic institutions. Here he has a good point, but perhaps makes too much of it in observing, "we see that in many countries the process of economic development creates tensions which often result in violent revolutions that destroy whatever semblance of democracy may have existed." Outside of the countries which have gone Communist (and these hardly as response to economic development), is it really true that democracy has lost ground among the underdeveloped countries of the world during the past fifteen years? In the non-Communist world are the jails fuller of political dissidents, the press more muzzled, elections fewer and more rigged, labor unions weaker, peasants being evicted in larger numbers from the land, choice of occupation and consumption goods more restricted, schools more decayed and teachers more authoritarian than in 1945? I doubt it.

I turn now to some comments on Professor Mikesell's excellent specific proposals for implementing what he calls in his conclusion "a foreign aid program aimed at supplying, in co-operation with other industrialized countries, all of the capital that the less-developed countries can productively employ in accordance with reasonable standards of performance."

Here are three proposals:

- 1. More attention should be paid to economic reform and sound economic policies and less to current changes in per capita GNP. This is a sound prescription, for in the long run the capacity of a country to employ capital productively may be a function more of its economic policies than its statistical rate of growth.
- 2. Multilateral rather than bilateral operation of economic assistance. To the advantages cited (spreading the cost and enhancing the chance for economic reform) I would add several more: improved co-ordination in use of funds drawn from a single pool rather than many streams, greater stability in the flow of capital, and more likelihood of international co-operation in reducing trade barriers.
- 3. Honest soft loans should be employed. Professor Mikesell makes a convincing case that "either the less-developed countries must expand their rate of export growth or there must be a substantial change in the nature as well as the volume of our development assistance." Elimination of bad economic policy in the underdeveloped countries and reduction of trade barriers in the West are necessary but not sufficient to solve the export lag. Hence the prescription of honest soft loans carefully geared to expansion of exports with repayment under exceptionally long grace periods and amortization schedules. This is a constructive suggestion.

Professor Mikesell would be the first to admit that he has left many questions unanswered but we are all in his debt for a stimulating and forthright paper that wrestles with the basic issues.

PROBLEM OF SOCIAL PRIORITIES THE BALANCED BUDGET

By ARTHUR SMITHIES Harvard University

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For over a quarter of a century, economists, or the majority of them, have been protesting against the dogma that the annually balanced budget is the path of financial virtue. I regret to have to report that we have made remarkably little headway at the high political levels. Despite the economists, or perhaps because of them, every President has clung tenaciously to the dogma. President Roosevelt's papers clearly reveal that he regarded budget deficits as an evil that had to be tolerated in order to achieve a greater good. The published views of President Truman make his views on the subject abundantly clear. The spoken utterances of President Eisenhower leave no doubt about where he stands on the matter. But despite our failure to demolish this pillar of the financial temple, there seems to be general acceptance of the view that deficits, though evil, are inevitable during depressions. The 12 billion dollar deficit in 1958 does not seem to have been grist to anyone's political mill-perhaps because everyone participated in creating it. But 1959 and 1960 have seen desperate if not ruthless efforts not only to achieve a balanced budget but to achieve balance at the preexisting level of taxation. I can easily visualize the tortured sessions in the Budget Bureau and the Treasury that produced a surplus of 100 million dollars in the President's budget for fiscal 1960. I imagine similar sessions are going on this minute with respect to fiscal 1961.

Adherence to the dogma is so strong that we are prepared to delay vital defense programs in order to pay lip service to it. The government is also willing to impair the budgetary process itself in order to preserve the semblance of balance. As one spectacular example, I can find no indication of the capital cost of post office construction in the President's 1959 budget. Even though the government has decided to buy its post offices on time, surely the public is entitled to know how many post offices are being bought. If rationality rather than dogma dictated attitudes towards the budget, there might be less incentive for deception.

The survival of the balanced budget rule, however, is not entirely a matter of dogma. Individuals and groups with no dogmatic convic-

tions have a strong interest in keeping the dogma alive. The classical objection to government debt was a natural reaction to the consequences of government extravagance during the seventeenth and eighteenth centuries.¹

The requirement of a balanced budget was and still is the simplest and clearest rule to impose "fiscal discipline" and to hold government functions and expenditure to a minimum. Those who still entertain this desire as an overriding objective may be well advised not to retreat from the general rule until they are reasonably sure that the retreat will not become a rout.

The advocates of unbalanced budgets have not been reassuring from the conservative point of view. The unbalanced budget usually means fiscal freedom, borrowing, and deficits, and not deficits or surpluses as the occasion demands. The New Deal deficits were associated not simply with recovery but with recovery and reform; and when the New Deal was in full flower, the President took pains to insist that recovery was inseparable from reform.

Even an avowedly countercyclical fiscal policy is believed to give rise to an upward trend in expenditures that might not otherwise occur. The expenditures undertaken to counteract a depression are unlikely to be discontinued in the succeeding boom. If the boom is countered at all, the measures taken will be credit restriction or increased taxation; and then further expenditure programs will be taken to offset the next depression. The increased expenditures hastily undertaken to meet the 1958 recession indicate that this possibility is by no means academic.

The discipline of the balanced budget is not necessarily the right degree of discipline. It is generally agreed that in time of war the unwilling taxpayer should not be allowed to hamper the defense of the country. The taxpayer is supposed to come into his own in times of peace. But the present situation is neither peace nor war. Despite amiable conversations among heads of state, a permanent state of military readiness for the indefinite future will be imperative. Organized groups of taxpayers have not shown a clear appreciation of the situation. The President and the leaders of Congress must have some freedom to act even though they cannot pay the bills from current revenue. But if all notions of fiscal discipline and budget balance were removed and no alternative was provided, there can be no doubt that expenditures would increase to a level that was economically undesirable and politically demoralizing. However rich we become, public and private wants are likely to increase more rapidly than the means of satisfying them; and in our complex political system some rules of financial con-

¹For an admirable survey of the history of the balanced budget doctrine, see Jesse V. Burkhead, "The Balanced Budget," reprinted in *Readings in Fiscal Policy* (A.E.A., 1955).

duct that are simple enough to survive in a political context seem to me to be desirable.

II

Nevertheless, the rule that the budget should be balanced annually is inadequate to secure the proper allocation of resources between the public and the private sectors. The objections to it have been stated time and again. I shall therefore confine myself to a brief summary of those I consider the most important.

First, to attempt to balance the budget on an annual basis is inconsistent with the long-range character of many government programs. Research, development, and procurement for defense purposes inevitably involve activities extending over a number of years. If the programs are well conceived in the first place, waste and inefficiency will result from disrupting them in order to achieve particular budget results. I remember that on one accasion during the Korean war the government deferred payments to contractors for the sake of the appearance of the budget and naturally had to pay a high rate of interest to them as compensation for waiting for their money. Again, it is wasteful to suspend work on a battleship for the sake of avoiding disbursements at a particular time. Perhaps the battleship should not have been started; but to leave it half-finished for a time simply adds to its cost.

Another case where the requirement of annual balance is disruptive is the foreign aid program. This program is the favorite target for indignant charges of waste and inefficiency. But there is no surer way to waste and ineffectiveness than to expose our own program to such vicissitudes and uncertainties that the receiving countries are unable to mesh their own activities with it. Everyone who has examined the problem with understanding and sympathy has stressed the need for continuity.

With respect to the question of "annuality," the economists and the accountants are in league against effective government operations. The accountants like to clean up their books every year and hence stress the need for annual control. The economists take the same point of view because they want a flexible fiscal system whose impact on the economy can be varied from year to year as a contribution to general economic stability. Some compromise between the programming and the annual points of view is clearly needed. Neither can be ignored. But a satisfactory compromise, in my opinion, requires less strict adherence than we now attempt to the annual point of view.

A second objection to the balanced budget rule is that stress on the balanced budget as a criterion tends to give the misleading impression that the government is well managed if the budget is balanced. The examples I have just given illustrate this point, but, more generally, there is no indication that some over-all rule will secure efficiency down the line. When budget requests are cut to conform to the rule, the programs most likely to suffer are the new ones designed to meet new situations; and those most likely to survive are those that have acquired the support of powerful vested interests inside or outside the government. Not all new activities are necessarily more meritorious than the old, but some of them are. The way we now seem to be placidly accepting the Russian lead in space exploration—presumably for budgetary reasons—is a vivid illustration of my point.

Government efficiency cannot be achieved by budget ceilings imposed at the behest of hardheaded budget directors and appropriations committees. While some discipline of this kind is probably inevitable, the solution must lie in application of the economics of choice, subject to budget constraints, at every level of government. Public administrators traditionally do not learn economics, and vested interests have a strong interest in avoiding the application of economic principles.

The third objection relates to the effect of the balanced budget on economic fluctuations. Surely it is now agreed by economists that attempts, especially successful ones, to balance the budget every year worsen economic fluctuations. If governments curtail their expenditures when they are short of revenues and expand them when yields rise as a result of economic prosperity, their activities will be cylical rather than countercyclical. It may be argued that I am stressing income effects and ignoring the monetary consequences of the balanced budget. The pre-Keynesian view was that depression cuts of expenditures released funds for the private economy. But the decisive objection to this point of view is that a central bank can do the same thing, so that the country can have the benefit of both income and monetary effects.

My final objection is that the balanced budget will not necessarily be the policy needed for achieving desired rates of economic growth. One of the unhappy ironies of the present time is that although the country is richer than it has ever been, further growth is becoming an explicit objective of policy—at a time when we should be enjoying the euphoria of John Stuart Mill's stationary state. We are not prepared to get the additional resources needed for national security and social welfare by cutting back on consumption. That would mean higher taxes. We must therefore grow in order to obtain more resources. Some eminent authorities maintain that the American economy must grow at 5 per cent a year instead of its traditional 3 per cent. If accelerated growth is required, it seems to me very likely that the total rate of national saving must be increased, and the only practicable way to increase total saving

is through the generation of budget surpluses. Budgetary doctrine in this country has hardly begun to contemplate this possibility.

III

A more general objection to the balanced budget or any other budgetary rule is that it places unnecessary restrictions on ability to achieve a variety of economic policy objectives. In terms of Tinbergen's now famous proposition, the requirement of balance may leave the government with fewer instruments than it has targets; and consequently may mean that objectives more important than balance must be ignored or that new instruments must be discovered.

The point can be illustrated very simply. Let us ignore for the moment pressing issues such as inflation and the balance of payments and assume that the government has only three policy objectives: first, it must spend enough to give effect to foreign and domestic policy objectives; second, it must maintain full employment; and, third, it must ensure that private investment will, in each year, be carried out at the rate required to maintain a given rate of economic growth for the economy as a whole. Thus every year it has three fixed targets: national income or output, private investment, and government expenditures. With present institutional arrangements, convictions, and predilections, it is virtually restricted to three instruments; namely, appropriations, taxation, and general credit expansion or contraction.

If the government has freedom to use these three instruments, it can attain the three objectives. If in addition it must balance the budget or maintain any prescribed relationship between expenditures and revenues, it has set for itself a fourth objective and is consequently one instrument short.

So long as it possesses only the three instruments, some other must give way: growth, full employment, or the government's own programs. As a matter of fact, during the last few years the government has placed even more severe restrictions on itself. It has attempted not only to balance the budget but to balance it at existing levels of taxation. This means that it has denied itself the use of one instrument. The expenditure objective necessarily gives way to this requirement (insofar as the requirement is met), and the government is left with general credit policy to achieve both full employment and a satisfactory rate of growth—a task that it is logically and practically impossible for the harassed monetary authorities to perform. Their difficulties are compounded when in addition they are expected to help correct the balance of payments and to prevent inflation.

If the government is short of instruments, it must acquire new instruments if it is to attain its objectives. Such new instruments could

be selective credit controls, selective tax measures, and various kinds of direct controls. It would take me too far afield to discuss these possibilities in detail. Suffice it to say that many of them are pure anathema to those who must vehemently support the balanced budget doctrine. They are likely to be required to pay a high price for the dogma.

IV

We are unlikely to achieve full coherence in the formation of fiscal and budget policy. Some incoherence is likely to remain so long as there is separation of powers between the President and Congress and between the powerful committees of the Congress. Nevertheless, considerable improvement is possible and feasible. To be optimistic about that, one only has to reflect on the extent to which economic thinking has penetrated the government since World War II, largely as an outcome of the Employment Act of 1946 and the institutions set up under it. I therefore consider it worth while to offer some suggestions concerning the directions that improvement might take.

First of all, the President should transmit his budget to Congress as part of a comprehensive economic program. This is not done at the present time. The present Budget Message is notable for its lack of economic analysis. The President's Economic Report, on the other hand, is equally notable for its lack of an analysis of the economic impact of the budget. However much they may consort in private, the Budget Bureau and the Council of Economic Advisers do not embrace in public. The President's program would analyze economic policy as a whole in terms of the variety of objectives to be attained and the instruments to be employed.

With respect to the budget itself, the President would recommend a surplus, balance, or a deficit, depending on economic conditions. If a deficit were proposed, this should be proposed as a positive recommendation, not as a confession of failure to balance the budget combined with a wistful hope that balance will be achieved next year.

This approach could have the same disciplinary value as the balanced budget. If the President were prepared to give the weight of his authority to the need for a surplus or a deficit of a certain amount, that should have the same disciplinary value as balance from the point of view of the Congress and the executive departments.

For this suggestion to be as effective as possible, the Congress would have to co-operate. In particular, the Joint Economic Committee should join with the Appropriations Committee and the Ways and Means Committee in considering the President's program and in formulating Congressional economic and budgetary policy. But such a change in

Congressional procedure is unlikely to come about unless the President takes the lead.

Second, the President's economic program should distinguish between long-run economic policy and the policy needed to counteract particular episodes of boom and recession. The long-run policy should contemplate continuity in government operations and continued growth of the economy. Budgetary policy in particular should be designed to conform with the requirements of long-run growth.

Of course long-run policy would be revised from year to year, to take account of changing circumstances and to correct errors in diagnosis. But in the absence of violent changes, say in defense requirements, it seems unlikely that abrupt changes in the relation of government expenditures to revenues would be required. Consequently, some simple budgetary rule that should apply in normal circumstances may be feasible. In times of full employment without inflation, it could be said that the budget should have a surplus or a deficit of some known order of magnitude.

It follows that the basic revenue and expenditure estimates should be made and published with reference to a full employment situation rather than to the situation actually predicted. This is the stabilizing budget approach that has long been advocated by the Committee for Economic Development, but which has made very little headway in official circles.

I suggest, also, that if the government's policy is to keep a stable price level, the expenditure and revenue estimates should be made in stable prices. This procedure provides an automatic check on inflation. It would tend to prevent inflationary increase in revenues from being regarded as a substitute for taxation. It would also put some pressure on the spending agencies in the event of inflation. They should make some contribution by attempting to curtail their activities. But if they consider that impossible, they should demonstrate the fact in requests for supplemental appropriations.

Thirdly, the question of countercyclical policy should be dealt with in a separate chapter of the President's program. This would include a discussion of the effects of recessions or booms on the budget and recommendations concerning the budgetary measures needed as correctives.

In view of what I said above, long-range government procurement programs should be interfered with as little as possible for cyclical policies. Nor should new programs that will last for a number of years be hastily adopted merely for the sake of relieving a single recession. This, however, does not mean that all public works should be continued at the same rate regardless of booms and depressions. Highway con-

struction and many items authorized by the Rivers and Harbors Bill can be adjusted to short-term economic needs.

However, if the main emphasis were placed on changes in taxation and transfer payments for purposes of short-run stability, the inefficiencies connected with abrupt alterations in expenditure programs could be avoided. The 1958 recession furnishes a good example. The government refused to use tax reduction as its fiscal weapon, and consequently got large and ill-considered increases in expenditures which will continue long after the antidepression need for them has passed. Nevertheless, I believed at the time and still believe that the tax route would have been wrong. Taxes once reduced are notoriously hard to restore. In fact it is hard to think of any tax increases during the last thirty years that were not undertaken in response to emergency situations. Even the tax increases of the New Deal come under that category. If the existing tax rates are likely to be needed for long-run purposes, it is of questionable wisdom to reduce them for short-run reasons, unless the reduction can be of an explicitly temporary character.

This leads me, and has led many others, to the conclusion that short-run stability should be achieved as far as possible through "built-in flexibility" of the budget and through monetary measures that can be readily reversed.

Built-in flexibility has increased appreciably as a result of social security, unemployment compensation, and agricultural support on the expenditure side and through the automatic operation of the tax system. But such measures—even in conjunction with vigorous credit measures—are unlikely to meet the requirements of a severe recession. There is need for further automatic measures. Consequently, I venture to repeat a proposal in which I participated some years ago.² Under certain specified signs of recession, there should be an automatic reduction in the first bracket of the income tax. The reduction should be restored automatically when recovery has reached a prescribed point. To guard against inappropriate use of the remedy, its application should be subject to veto by the President. Devices such as this could give reasonable assurance that anything but the deepest depression would be corrected and would help materially to avoid the psychological conditions that might produce depressions of the catastrophic kind.

Our proposal was considered in the chancelleries of the world and was unanimously rejected by respectable opinion. Had it been in effect it would have been very serviceable in 1958. Automatic reversible devices are the most effective way to avoid the radical political con-

² See the United Nations Report, National and International Measures for Full Employment (1950).

sequences of a flexible fiscal policy, and thus to allay the fears of those who cling to the balanced budget rule on rational rather than superstitious grounds.

To return finally to the long-run question. I have suggested that surpluses rather than deficits may be needed in the future—if the government pursues an economic policy that is consonant with national and international needs. But surpluses are hard to achieve. Senator Taft once remarked that in his long experience, surpluses and debt retirement occurred only through inadvertence. If that is true, perhaps the balanced budget doctrine has some long-run merit after all.

CRITERIA FOR UNDERTAKING WATER-RESOURCE DEVELOPMENTS

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I offer here a few comments on criteria for undertaking waterresource developments, in the context of a concern with the sorts of "social priorities" which various alternative criteria may express or implement. Initially, I am indebted to many authors—including Mc-Kean, Eckstein, Krutilla, Margolis, Wantrup, and Steiner-for having treated the general topic much more fully than is possible in a few pages here. My attention will center on four issues which are either treated or neglected in received writings; namely: (1) the general investment criterion, as defined in terms of the relation of benefits to costs and as made specific for assumed constraints on the investing agency's budget; (2) the interest rate to be used, by way of making this criterion articulate, in discounting future benefits and costs; (3) the timing of investment and the avoidance of premature investment; and (4) the influence of procedures in benefit calculation on the design of projects, with especial reference to the role of so-called "intangible" benefits.

A few beginning words are in order concerning the goals and derived rules for action which should govern the undertaking of public investments for water-resource development or kindred purposes. There are many alternative goals, and without naming them or judging their relative merits, I will posit the general goal of maximizing aggregate material welfare over time, and will suggest the following succession of general rules: (1) that the government should undertake welfareincreasing investment in areas in which private enterprise is institutionally discouraged from undertaking it at all or in requisite amounts or ways, and should undertake it at least up to the level at which the marginal efficiency of capital for public investment becomes as low as that for private investments in general; (2) that the government should generally undertake additional investments in these areas as necessary to secure any available excess of benefits over costs when both are discounted at some social rate of time preference which is potentially lower than the marginal efficiency of capital in the private market; and (3) that the government should, if constrained as to budget for capital outlay or operations or both combined, rank and choose among investment opportunities so as to secure from a given time series of limited budgets a maximum excess of benefits, net of unconstrained costs, over constrained costs, all benefits and all costs being appropriately discounted.

As to general investment criteria to be used in accepting or rejecting, selecting among, and designing government investment projects, two main alternatives have been emphasized in the literature. Both are relevant essentially to planning the expenditure of a time series of limited fixed budgets which will not permit the undertaking of all possible projects, and both are oriented to ranking projects from period to period to the end of selecting a succession of sets of projects (including a project set for each budget period) which will have the greatest present value obtainable by expenditures through time of the budgeted funds, present value being calculated by discounting project benefits and costs at a presumably appropriate rate of interest. (I will not distinguish these general alternatives on the basis of the interest rate applied, since any of several alternative sorts of rate can be used in equally appropriate fashion with either one. It may be added that the benefit stream for every project should of course be calculated net of legitimate offsets or displacements from the private sector account, for which see Steiner.)

One criterion is to rank and select projects in any current period so as to find the set which has the greatest possible excess of aggregate discounted benefits over aggregate discounted costs when the funds available for current capital investment are fully applied. The other criterion is to rank and select in any current period so as to secure with available investment funds the project set affording the greatest possible ratio of discounted aggregate benefits to discounted aggregate costs. Both criteria have been discussed, in principal recent writings, on the apparent simplifying assumption that the total capital cost of any project selected will be met out of the budget of the period in which it is initiated, so that deferred capital costs for projects with a long construction period are not charged to the budgets of future periods. Thus we are selecting currently among projects "to be paid for now" and not among projects on which to make a down payment. I will follow this assumption for the time being, but will comment on the implications of alternative assumptions a bit later.

Using a familiar notation in which for any project set V is the present value of the benefit stream, C is the present value of the entire cost stream (and C equals K plus O when K is capital cost and O is the present value of the operating-cost stream), the first criterion is oriented to selecting the current project set which will maximize V-C for any current investment budget K, and the second to finding the current project set which will maximize V/C, the current K being used in

either case to pay the full capital costs of any project initiated. The difference between the criteria is clarified if we note that, assuming all K for a new project is incurred in the current period, the first then

actually aims at maximizing $\frac{V-O}{K}$, or in other words at maximizing the

ratio of discounted net benefits to given capital outlays, whereas the other aims to maximize the ratio of gross benefits to all costs, both capital and operating.

The two criteria give identical results in identifying individual projects which are respectively inframarginal and submarginal from a social standpoint with no budget constraints (assuming that the discount rate employed expresses social time preferences). Both ratios are unity when V equals C, as for the socially marginal project, exceed unity for the inframarginal project, and are less than one for submarginal projects. They are thus essentially true alternatives only as criteria for ranking projects in the search for the optimal set subject to budget constraints or for choosing between mutually exclusive projects with or without budgetary constraints.

The first criterion (maximize
$$\frac{V-O}{K}$$
) provides, on certain general

simplifying assumptions, the best ranking principle if it is supposed that the investment budget of each of any relevant succession of periods for the investing agency will be fixed at a certain level and in particular will not be decreased in response to increases in agency total operating costs induced by past projects, or increased to compensate for proposed reductions in future operating cost totals for the agency such as might result from redesign of a succession of project sets. This assumption is, in effect, that the legislature will in any period appropriate an amount for current investment which is not influenced by the carrying charges of old projects or by the prospective carrying charges of future ones.

The second criterion (maximize V/C) provides, on similar simplifying assumptions, the best ranking if it is supposed not only that the total water agency budget is fixed for each of a succession of periods, but also that the operating costs of old projects are always deducted from the fixed total each period to arrive at a remainder which is the current investment budget. Then the agency, in order to maximize the present value of projects through time, is well advised to look to the aggregate operating-cost burden of proposed projects as well as to their benefits net of operating costs, and to penalize projects with high operating-cost ratios because of the extra funds they take away from investment budgets in future periods. This second criterion of

course leads to a ranking which virtually favors projects of higher capital intensity.¹

Which in fact is the better criterion? At first glance, this appears to be equivalent to asking which supposition about the character of the budgetary constraint is most realistic, and raises issues of fact concerning the behavior of Congress or other legislatures in determining the sizes of water budgets and their variations over time in response to changing opportunities, needs, and operating-cost burdens. Both assumptions are probably unrealistic in that they are both extreme, but the general question posed is whether or not Congress will appropriate for current project investments more if current or prospective total operating costs are proportionally less in relation to investment and enough more to offset the saving in operating costs. If Congress will, the second criterion seems superior; if it will not adjust investment appropriations at all, we must choose the first; and some superior intermediate but more complex criterion could generally be devised to fit specific predictions about Congressional behavior. I do not possess the factual information on which to base this sort of choice between criteria, and thus will leave the matter open, but will express a preference for the second criterion on other grounds.

To explore these other grounds in a very cryptic fashion, the application of the V/C maximization criterion to any stream of C outlays which the government may fix or come to incur will on the usual simplifying assumptions maximize welfare for the C stream, whether this C is arbitrarily determined or has simply been generated by maximizing in some fashion for a fixed K stream, unconstrained operating costs accumulating as they will. And the V/C maximization for such a generated C stream will generally lead to a different and better project mix (providing a larger V stream for the C stream)

than would have been arrived at by maximizing $\frac{V-O}{K}$ for the K stream

which would have then just generated the C stream in question. Thus, the relation of welfare to outlay is generally improvable for any C

As usually stated, both criteria apply to the expenditure of funds of a single current year, so that, in the expressions $\frac{V-O}{K}$ and $\frac{V}{C}$, K refers to the investment budget of the year, and V, O, and C refer respectively to the benefit stream, operating cost stream, and total cost stream (including capital investment) which are generated by the year's investment. More general parallel criteria would suggest maximization of the same expressions where K referred to the present value of the series of present and future K budgets, V and O to the present value of all streams of benefits and operating costs generated now and at all later dates, and C to the present value of the corresponding stream of all costs (which last would be simply the present value of all present and future budgets under the assumptions underlying the second criterion). The single-year criteria as stated are consistent with the governing all-year criteria only under certain simplifying assumptions concerning the time behavior of investment opportunities and budgets.

stream generated through $\frac{V-O}{K}$ maximization, through substituting

K for O in project selection. (Of course, we can always also do better by increasing the total C budget, if there are inframarginal projects left to be exploited.) Thus, I am led to conclude that the legislative determination of a series of fixed K budgets without constraint on generated operating costs would implement a socially nonoptimal planning mechanism, and one inferior to the determination of a series of fixed C budgets at an appropriately higher level (equivalent to the level of C which would presumably be generated with the same K budgets). Otherwise, we would not encourage a selection of project sets with the socially optimal degree of capital intensity.²

Let us now consider briefly an alternative assumption concerning the impact of project capital costs on particular budgets and imagine that, in a context where the typical project construction period spans several budget periods, only part of a project's capital cost (a down payment) is charged against the budget of the period in which it is initiated and the rest of capital costs are charged against several future budgets, as incurred. This raises no fundamental embarrassments for the preceding analysis or its conclusions if we suppose that the planning period for budget expenditures is made as long as any project construction period. But suppose that the narrower and more immediate problem is to decide, for a single current period, on a ranking of "starts" of projects and on the best disposition of a current investment budget on down payments, without extending the planning horizon beyond the current period. Then we have to consider as future project costs of the currently chosen set not only operating costs O but also deferred capital costs K_d , as distinct from current capital costs of the new project set, K_p .

 2 For a semiformal example, assume for simplicity budgets always small enough that not all inframarginal projects will be undertaken, and a replication of inframarginal project opportunities period to period always with an adequate distribution of O/K ratios and a significant difference in project ranking as between $\frac{V-O}{K}$ ratios and V/C ratios. Take a given invariant K series of constant capital budgets per period and select project sets to maximize V/C. This will generate in equilibrium a C series for which V/C is maximized. Now take the same K series and select project sets to maximize $\frac{V-O}{K}$. This will generate in equilibrium a second and larger C series, and also a larger V-C for the given K, but only because the total budget C has been enlarged. Now take the second and larger V will be obtained, by enlarging K and restricting O, than was obtained by maximizing $\frac{V-O}{K}$ for the beginning K series. From here on, of course, we can argue that V-C could be increased by increasing C (or C and K) so long as inframarginal projects remain to be exploited, but this only argues for larger budgets and not for any certain disposition of any C budget.

The first criterion, extended to this situation, would be to maximize $\frac{V-O-K_d}{K_v}$ (the ratio of discounted future benefits net of discounted

future capital and operating costs to the current and fixed down payment total), and the second still to maximize V/C. Application of the first criterion would give the better set selection if it could be assumed that the K_p series (for down payments) was invariant to the size of the sum of operating costs and deferred investment commitments, current or prospective, or that Congress would budget to cover any size of operating plus deferred investment costs without altering a predetermined K_p budget from year to year. Application of the second criterion would give the better selection if it were assumed that a fixed total budget for each period had to cover all starts, past investment commitments, and operating costs. In this problem (ranking starts for projects which have deferred investment costs) the assumptions underlying the second criterion seem to me to depict reality much more closely. Thus the V/C criterion is very likely to be preferred for ranking starts period by period, although a more refined alternative (somewhere between the first and second) should be better than either in light of the detailed nature of actual budget constraints.

The next issue concerns the rate of interest or time preference to be employed in determining the discounted present values of V, C, O and K which enter into either of the alternative critical ratios. Three main alternatives stand out here: (1) the internal rate of return of the marginal project which the budget will support (projects generally being ranked according to their internal rates); (2) the social cost of governmental funds, this being essentially the marginal rate of time preference or other marginal supply price which would be assigned by taxpayers to funds they give up through taxes; and (3) a social rate of time preference which expresses the consensus of the electorate concerning the rate of discount they wish to be applied to future costs and benefits in evaluating government projects which provide services for future generations. This last may diverge from and be lower than the marginal time-preference rates of taxpayers, on the principle that we may collectively wish to discount the welfare of a generation of greatgrandchildren at a lower rate than we individually discount future increments to our personal income streams.

I will posit that the proper aim of the water agency is to secure an excess of the present value of the induced benefit stream over that of the associated cost stream which is maximal with the assumed budgetary constraint, benefits and costs to be measured as valued by the populace. Then the rate of discounting employed in calculations should be some one which reflects the relative evaluation by the populace of

current or earlier income foregone and future or later income gained. This rate will clearly not be, except by coincidence, the internal rate of return on the marginal project which the budget will support, unless the total budget should be just the right size to allow a marginal project with an internal rate equal to the time-preference rate of the populace. In general its use in discounting will lead to the choice of a project set which is socially nonoptimal.

Employment of a discount rate reflecting the social rate of time preference is clearly more desirable, and the only problem is to identify such a rate. The social cost of government funds, or taxpayers' timepreference rate, is an attractive candidate here, because it gives some measure at the margin of the relative evaluation of present and future individual income by many members of the populace and because it can by various devices be measured empirically. It is not, however, necessarily the same rate that a majority of the electorate would vote for as a guide to investment policy in long-term public projects, both because of differing attitudes toward income streams going respectively to private individuals soon and to large masses of population later, and because many voters will not really be adjusted at the margin. psychologically or in the shaping of their own income streams, to the discount rate expressed by the social cost of governmental funds. Yet the practical ascertainment of a different social rate of time preference is difficult, and its determination by bureaucratic intuition or guesswork is not a very satisfactory substitute. Perhaps a legislative determination would be the practicable device.

Given these difficulties in definition and measurement, it can only be suggested that the appropriate rate for discounting in this context is a true social time-preference rate, either found by research or asserted through the processes of representative government, and that lacking such assertion or determination we may best rely on the social cost of governmental funds as a conservative approximation. One or the other sort of social time-preference rate should then be used in applying a general investment criterion of one or another type. That is,

we should maximize
$$(V/C)$$
 or $\frac{(V-C)}{K}$ (or equivalents, or compromises)

for the set, when all terms are discounted at the best available approximation to a true social time-preference rate. Projects should be ranked accordingly, and a proper social cutoff point would be reached with the project for which (V) fell below (C).

My next point concerns the timing of public investments in water projects, and is that the appropriate general criterion can and should be used not only to select out of currently available alternatives the optimal project set for any current period but also to codetermine

the optimal date, as among current and various future periods, for initiating each project. Thus the best project set for any current period should be determined only after eliminating from current consideration alternative projects which would better be initiated in future periods; the initiation of currently attractive, or inframarginal, projects may need to be deferred because they are even more attractive if begun later; and the investment programs for successive periods are in general properly interdependent because they express choices among mutually exclusive patterns of timing in the initiation of given projects.

Criteria such as that of maximizing
$$(V/C)$$
 or $\frac{(V-C)}{K}$ have typically

been made explicit by example only with respect to choices among a list of contemporary alternatives, with no reference to timing problems, and in this context prove useful in ranking projects and in choosing among alternative designs for a given project or among other mutually exclusive contemporary alternatives. By a simple extension of the logic of such criteria, we see that if stated in general form they are equally useful in determining optimal project timing by choosing among mutually exclusive beginning dates for any project.

In general, for investment subject to a budget constraint such as is represented in an available K series or C series, the rule is that the timing of any project should be deferred (or advanced) as between any pair of years whenever the deferral (or advancement) would increase the present value, discounted to time zero, of all future benefits net of unconstrained costs which are obtainable by the expenditure through time of the constrained budget series. If K is constrained, timing should be determined so as to maximize the sum of the present values (discounted to time zero) of (V-O) for all future years attainable through investment of the K series, where O represents all unconstrained costs; if C is constrained, timing should be such as to maximize the comparable sum of the present values of V for all future years attainable through investment of the C series. In evaluating the shift of a project from one period to another, of course, due allowance should be made, not only for the possible virtual gain in yield for that project (relative to discounted constrained costs), but also for the yields of other ranked projects which will be added to the project set in one period and subtracted in the other because the investment commitment for the shifted project is moved from the former to the latter.

Shifting a project start from a current to a future period (or vice versa) may be desirable even though the project is inframarginal in the current period in the sense of being above the provisional cutoff point at which the current year's investment budget is exhausted, alternative timing being neglected. Thus, to take an extreme example,

it would usually be desirable to delay for ten years the investment of 50 million dollars in a given water project if project services would not in any event be demanded in significant amount until a decade had passed, but thereafter would be demanded at the same rate regardless of when during the next ten years the facilities were built—and to do this even though with current construction the project had a benefit-cost relationship which, timing neglected, qualified it for an immediate start.

I raise this abstruse theoretical point because of its possible applications. Premature investment in water projects could be encouraged by the application of more simplified benefit-cost criteria of either form, and premature investment probably tends to occur in a certain proportion of public water projects. Detailed analysis of optimal timing procedures might provide a basis for better investment programming and for more realistic estimates of current budgetary needs.

A further point concerns procedures employed in benefit (and cost) calculations, especially with reference to so-called "intangible" benefits, and thus the essential content of actual or proposed criteria as applied. Ideally, of course, all types of true benefit should somehow be included and given appropriate value weights in comparing and selecting among alternatives, as should all costs, these importantly including negative benefits of any sort. Only if this is done can the best of theoretical criteria as applied lead to socially optimal results. In the application of criteria, either actual or as proposed, two aberrations from this ideal may be especially noted.

First, intangible benefits—those which are hard to measure and impossible to collect for—are generally given a secondary role in that they do not enter into the central benefit-cost calculation but are to be considered in supplementary notes and comments. This means, in general, not only that they are less likely to receive proper value weights in choosing among finally proposed alternatives, but also that they really are not given much of a role in the crucial analysis (based primarily on tangible benefits) through which projects are designed. choices among mutually exclusive alternatives are made in deciding what to propose, and alternative proposals are developed for final consideration. It seems to be as if in the primaries a limited number of nominations are made without much regard to the role of intangible benefits, and that in the final elections the comparative intangible benefits of the nominees (but only of them) are supposed to be given some weight but not too much in ranking these nominees. In this case, the roster of nominees may well omit superior alternatives, and the nomination-election procedure cannot generally be relied on to lead to socially optimal project design and selection. This is all to say that both the design and the selection of projects will tend, under actual or proposed procedures in applying good general criteria, to have an unduly commercial bias—all to the end of implementing a public water policy which may diverge seriously from the social optimum. Our suspicions of practice are heightened when we note that proposed projects always seem to have positive intangible benefits, and that negative benefits (for example, losses of recreational benefits) somehow tend usually to go undiscovered and undeducted in official project evaluations.

Second, project designs—as regards both project scale and the proportions in which various types of benefit are supplied—are frequently biased by an initial assumption concerning the absolute and relative prices to be charged to recipients of various sorts of benefit. In particular, a common assumption is that some tangible project benefit—e.g., irrigation water—will be sold at subsidized or discriminatorily low rates (though valued as a benefit at higher prices) and that recipients of other tangible benefits will not be similarly favored. Operating with this posit, we are likely to get inflated estimates of irrigation-water requirements and deflated estimates of some other requirements. And in practice we are likely to have nominated project designs which are strongly biased in favor of substituting irrigation-water benefits for some others, so long as a benefit-cost justification for such designs is available—even though a socially better ratio of benefits to costs might be obtained with project designs which assumed demands reflecting no discrimination in favor of irrigation, and perhaps demands reflecting discrimination in favor of some other categories of benefit recipients.

Obviously, there is no general merit to the posit that any one benefit, such as irrigation, should be thus favored by subsidy or price discrimination. The indicated procedure is to compare the benefit results for all relevant alternative systems of price discrimination and corresponding alternative project designs (why not subsidize power instead, or urban water?), and to arrive at a social optimum in which the express or imputed pricing system is derived rather than initially assumed. It is not evident that this is done in practice, nor have writers on the theory and application of criteria given the matter the attention it deserves. A barrier to corrections in procedure may be found in the attitudes of legislative bodies in charge of appropriations. And the proper consideration of alternatives of implicit discrimination in favor of recipients of intangible benefits is further impeded by difficulties of measurement. But the issue seems to deserve the most serious study of those charged with recommending water policies.

A summary of four scattered comments on the theory and application

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CRITERIA FOR APPRAISING GOVERNMENTAL HOUSING PROGRAMS

By Leo Grebler
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My assignment has all the attractions of a trip into territory strewn with land mines. On one side is the *Wertfreie* economics which really denies that we have any business dealing with our subject, except to predict the likely results of alternative courses of action. On the other side is the professional tradition of the political economist concerned with ends and norms as well as means. Straight ahead of us loom the forbidding problems of measuring utilities and defining the public interest. Next to this land mine lies the booby trap of performance standards. Nearby is the explosive role of politics in economic decisions. And throughout our territory are scattered the tempting but precarious side trips into other disciplines bearing on housing welfare. It will be a miracle if we can find the narrow path between so many hazards.

First, we must ask why there should be any interference with the market—other than the time-honored local controls in the form of building and housing codes, etc. Here, an easy answer is given by the cynic who tells us that politicians have discovered and learned to exploit the vote-getting potentials of housing programs. The trouble with this position is that the vote potentials must express widespread disenchantment with the performance of the housing sector. This disenchantment still needs to be explained and may at least in part be explainable in economic terms.

An easy answer is also supplied by reference to historical accidents. In this view, government housing programs are the result of the collapse of the mortgage market during the Great Depression, the search for pump-priming devices, and the aftermath of World War II, plus the notorious difficulty in terminating governmental activities that become entrenched in our system. Historical conditions may indeed explain the initiation and specific form of governmental programs. Moreover, federal legislation to meet housing emergencies has demonstrated to many people's satisfaction that the government "can do something about it." But historical conditions cannot account fully for the persistence and intensification of public programs in so many countries where a great variety of circumstances has led to the same result: increased government intervention in housing.

Another easy answer comes from some of the specialists who have

become so thoroughly imbued with their subject that they endow housing with top social priority without giving much consideration to competing individual or collective wants. The main trouble here is a myopic view of the world that does not help in solving the problem of resource allocation among alternative uses.

Finally, an easy answer is furnished by those who, as a matter of faith or intellectual conviction, accept the competitive system under consumer sovereignty as the most efficient and equitable organizing principle. But the question is to what extent the housing market and the related mortgage market conform to the underlying theoretical models.

I suggest that economic criteria for federal interference with the market be derived from economic performance standards for the housing sector. This concentration on economic criteria does not mean we are insensitive to noneconomic aspects of housing. It simply delineates the area in which we can hope to apply whatever professional skills we possess. As for noneconomic aspects, we simply bow to that archradical, Benjamin Disraeli, who said: "The best security for civilization is the dwelling, and upon proper and becoming dwellings depends more than anything else the improvement of mankind. Such dwellings are the nursery of all domestic virtues, and without a becoming home the exercise of those virtues is impossible."2

Performance Standards

Borrowing from the concept of "workable competition," one may specify standards of workable performance of the housing sector. The most important standards underlying this paper are as follows:

- 1. A housing supply sufficient to allow each consumer unit demanding separate living quarters to occupy a dwelling unit of its choice in respect to size, location and environment, tenure, and quality, subject only to the economic restraint of price. Absence of other than price restraint.
- 2. A supply of dwelling units, as described, at prices each household can pay without undue, continuous strain on its budget. The point of strain may be defined as a ratio of occupancy cost or rent to income.
- 3. A supply of vacant dwelling units distributed geographically and by size, quality, and price, etc., in such manner that it allows people to move without excessive friction.
- 4. An efficient market organization, including adequate market information available to consumers as well as suppliers.
 - 5. A reasonably operative market mechanism which, together with

1959), p. 62.

¹ There are, of course, additional general criteria for assessing any governmental programs, as well as the pervasive problem of computing the cost of public credit and subsidies. This paper deals with criteria specific to the housing sector.

² Quoted from Robert Moore Fisher, Twenty Years of Public Housing (Harper & Bros.,

effective local controls, causes depreciation to lead ultimately to the end of the line: abandonment, physical removal, and replacement of the asset (though not necessarily on the same site).

- 6. New building sufficient for both replacement and growth.
- 7. Steady progress in meeting rising individual and community housing standards, including more widely shared gains in consumers' housing satisfactions.
- 8. A financial system which allocates external funds for housing on the basis of anticipated net yields and risk evaluations in comparison with alternative investments, and which leaves no credit gaps identifiable on this criterion.
- 9. Reasonable stability of the housing sector within the framework of stable growth of the economy as a whole.
- 10. Meeting the above performance standards at minimum and resonably balanced private and social costs.³

To what extent have our performance standards been met? What are the obstacles to better performance? Have the federal programs removed or at least moderated some of these obstacles? Within my time limits. I cannot go over the entire list of standards. Let it merely be mentioned that we have gone a long way in augmenting the housing supply to the point where involuntary doubling-up of families is minimal and overcrowding limited to a relatively small segment of the population, though it is more frequent among Negroes and certain other minority groups than among whites. The increase in vacation and weekend cottages even foreshadows the emergence of a new standard of two housing units per family—two houses in every garage! Also, the quality of housing has unquestionably improved in the past ten years. With these preliminaries, I shall now concentrate on a few selected performance standards which involve resource allocation (mainly Nos. 7 and 10 above); the institutional framework within which the market operates (mainly Nos. 5, 6, and 8); housing assistance to certain groups of the population (mainly Nos. 2 and 7); and economic stability (No. 9).

Resource Allocation

Certain federal programs which operate over a broad range of the housing sector have come to be used as vehicles for raising the alloca-

³ Obviously, a paper twice as long as this one could be devoted to justifying and specifying in detail these performance standards. It may merely be noted that our performance standards differ from the common housing need estimates and the objectives set forth in the "Declaration of National Housing Policy" in the Housing Act of 1949 in that they do not employ physical criteria such as "substandard" housing or "decent home." There are serious questions concerning the economic meaning of such terms and their application to quantitative housing goals. Moreover, standards of "adequate" housing change over time. Consequently, the notion of eliminating "substandard" housing once and for all, in ten or twenty or thirty years, is highly unrealistic.

tion of resources to housing over and above the share obtained from consumer decisions and the interplay of market forces. These are the mortgage insurance programs backstopped by the mortgage purchases of the Federal National Mortgage Association, which now holds more than 5 billion dollars of loans.

If this is their objective, have the programs succeeded? Unfortunately, our profession has done little to throw light on this question. So far as I know, there are only two comprehensive analyses of the overall quantitative impact of the programs on residential construction, and they come to almost diametrically opposite conclusions. According to one, the effect during the postwar years has been merely to raise the price but not the real output of construction.4 According to the other, the programs can be credited with a substantial increase in output.⁵ Here is a challenging unfinished piece of business, as intriguing from a methodological viewpoint as it is important for policy formation.

If the allocation of resources to housing has been adversely affected by high acquisition cost of housing,6 the federal programs have done next to nothing to attack the problem. The few steps in the direction of federally-sponsored technological research have been timid and halting.7 Mortgage insurance at best has made a modest contribution by helping develop merchant builders operating on a larger scale. The federal government has tread lightly in using the substantial leverage of its programs for greater progress in removing costly restrictive practices. which are often ossified in building codes. Instead of direct attack, the programs offer a compensatory device. They have sought to soften the impact of high real costs by reducing down payments and outlays for

Special aids were extended to prefabricators under the veterans emergency housing program of 1946, which collapsed after a short life. Technological research was also stimulated by the research provisions of the Housing Act of 1948, but appropriations for this activity were terminated after a short while. Experience would indicate that crash programs and a monolithic approach, such as prefabrication, are doomed to failure.

⁴R. J. Saulnier, Harold G. Halcrow, and Neil H. Jacoby, Federal Lending and Loan Insurance (Princeton University Press for NBER, 1958), pp. 336-47.

⁶George F. Break, "The Growth and Significance of Federal Loan Guaranties and Insurance" (manuscript for publication by the Nat. Planning Asso.), Chap. 5.

⁶Between 1915 and 1957, residential construction costs as measured by the Boeckh index increased by 394 per cent. In the same period, the wholesale price index for all commodities (BLS) rose by about 160 per cent and the consumer price index (BLS) by 177 per cent. Between 1926 and 1957, the wholesale price index for commodities other than farm products and food increased by 76 per cent. In the same period, the index of residential construction costs rose by 172 per cent. The increase in construction costs would remain dispreportionate even if it were possible to allow for the insufficient reflection of remain disproportionate even if it were possible to allow for the insufficient reflection of productivity increase in available cost indexes and for their resulting upward bias. For productivity increase in available cost indexes and for their resulting upward bias. For more extensive discussion of trends in construction costs, see Grebler-Blank-Winnick, Capital Formation in Residential Real Estate (Princeton University Press for NBER, 1956) pp. 278-79 and Appendix C. We need not, nor can we, examine here whether the disproportionate long-term rise in construction costs is due to the large labor-cost content in residential building, or lagging technological advance, or the supply cost curve of lumber, or higher standards imposed in part by building codes and similar regulations, or restrictive practices.

debt service. But the postwar injection of easier credit may have actually intensified the increase of construction costs and house prices. An industry thriving on easy terms may have lacked the discipline and incentive to innovate, strive for technological advance, and develop better marketing techniques.

On the whole, then, there remains real doubt whether the mortgage insurance and FNMA programs have contributed substantially to resource reallocation in favor of housing. There are indications that past allocation trends adverse to this sector may have been reversed in the postwar period. The share of housing expenditures in total consumption, which fell for at least three decades before World War II, has increased.8 The long-run decline in the share of residential construction in GNP (in real terms)9 seems to have come to a halt. As yet we cannot say with confidence that these reversals of past trends reflect a basic shift in consumer taste, associated among other things with more leisure. renewed cultural emphasis on family and home, and suburbanization. In any event, it appears that reallocation of resources in favor of housing depends mainly upon fundamental changes in our way of living and on prolonged prosperity, and that the federal credit programs may at best facilitate these changes.

Improvement of Institutional Arrangements

Have the federal programs improved the performance of the housing sector by promoting better institutional arrangements? I shall illustrate by reference to two of our performance standards.

As has been demonstrated by at least a hundred years of urbanization, the market mechanism combined with local codes has failed to meet our test of providing for replacement of depreciated assets. The durability of houses is not the only nor even a sufficient reason—witness the market-induced scrapping of other durables. There is the additional and perhaps more important fact that the removal of dwellings is determined mainly by forces external to the housing market; that is, the demand for other uses for the sites of dwellings. The sites demanded for other uses are not necessarily, nor are they often in fact, those with the most heavily depreciated residential structures. Consequently, the external forces determining the scrapping of houses have not produced sustained, vigorous replacement. Inadequate local codes or their lax, timid, and often downright corrupt enforcement have added to this

⁸ Between 1909 and 1946 the share of housing expenditures in total consumption declined from 19 to 12 per cent exclusive of household utilities and from 24 to less than 14 per cent inclusive of utilities. Cf. J. Frederic Dewhurst and associates, *America's Needs and Resources* (Twentieth Century Fund, 1955), Appendix 4-5. Between 1946 and 1957, the current BLS reports which use a somewhat different method of calculation show an increase from 9.4 per cent exclusive of utilities to 12.4 per cent.

⁹ Cf. Grebler-Blank-Winnick, *op. cit.*, Chap. IX.

difficulty. As a housing expert recently reminded us, we have been fairly successful in driving the unsafe jalopy off our highways, but concerted and continuous efforts to cast out unsafe dwellings have been rare. 10 Also, while the demand and supply forces perpetuating slums are complex, public action could at least mitigate one of these forces: the low marginal cost of operating slums. The low cost often reflects real-estate taxation based on faulty assessment practices which fail to take proper account of actual net income.

Largely because the housing sector has provided for growth rather than replacement, its performance in meeting rising individual and community standards has been less satisfactory than that of markets for other goods and services. To be sure, rising standards have been achieved by improvement of existing dwellings as well as by new construction. But dwelling standards are inseparable from environmental standards, which are again largely controlled by forces external to the housing market. We can marvel at venerable New England homes around the village green, so well maintained and improved with up-to-date equipment. Generally, however, the market cannot induce capital improvements when old property is in a sea of neglected houses or an area with inadequate community facilities or when it fronts on a major traffic artery.

The urban renewal and public housing programs can be credited with some progress in the removal of depreciated housing. If scrapping is to be accelerated, however, more effective use must be made of market forces and regulatory and real-estate tax policies that can help accomplish the objective.¹¹ In the absence of these, we face the unpleasant prospect that urban surgery at immensely growing public expense will still be necessary thirty or fifty years from now.

To cope with this problem, a so-called "workable program" for slum prevention and elimination is now required of local governments before they can qualify for federal assistance for urban renewal and public housing. In my observation, there has been altogether too much pussy-

¹⁰ John Searles, J. of Housing, Sept., 1959, p. 295.

¹¹ As for more imaginative and forceful local actions, one might consider surcharges to slum owners for fire protection and perhaps other public services clearly associated with certain defined conditions of their property (Martin J. Bailey, "Note on the Economics of Residential Zoning and Urban Renewal," Land Econ., Aug., 1959). In addition to using eminent domain for land assembly in urban renewal projects, this power, under appropriate amendments to state laws, could perhaps also be employed to condemn the illegal, low-value improvements alone instead of both land and improvements. This method would not only be less expensive but would force owners more effectively to place new improvements on the site or sell the site to others for improvements. Further, since the scrapping of deteriorated housing is often impeded by the difficulty of assembling large numbers of parcels for new large-scale private development, the use of eminent domain without write-down of land values might be examined so as to solve the problem of "holdouts." These examples are given not to advocate specific measures but rather to illustrate the range of actions which might be explored.

footing in using this device. Here, as well as in other programs, a much more forceful *quid pro quo* policy seems necessary. Under such a policy, federal assistance would be denied or scaled down substantially if the local government failed to give tangible evidence of continuous, effective, and cumulative action.

Another case where opportunities for better institutional arrangements have been used halfheartedly is the mortgage market. Again, one can credit the Federal Home Loan Bank System with improving the secondary liquidity position of savings and loan associations and the mortgage insurance programs and FNMA with improving the marketability of residential mortgages. But the mere existence of these programs has also lulled us into apathy on the much-needed reform of state laws which inhibit the interregional flow of mortgage funds or make mortgage loans unnecessarily costly or risky. The marketability of conventional loans is still severely limited. Regional and local differences in effective mortgage interest rates seem to be still far greater than is justified by loan origination and servicing costs, given equal risks. The Voluntary Home Mortgage Credit Program is only a token measure to improve borrowers' access to lending facilities in remote areas and small towns where imperfect competition in the mortgage market is most pronounced.12

Instead of attacking directly these and other defects in institutional arrangements which establish the ground rules for the market, the federal programs again offer largely compensatory devices. Federal investment in mortgages through FNMA has made up in part for imperfections of the mortgage market. Federal grants and loans for urban renewal have been allowed to divert the energy of local governments from local action to efforts to obtain their share of federal assistance.

Assistance to Selected Population Groups

For a long time, housing subsidies to certain groups of the population have been justified on the argument that poor housing inflicts large costs on society. However, the simple correlations between substandard housing and social disorders costly to the community are rightly no longer accepted as proofs of causal relationships. But I suggest a case can still be made for the proposition that improved housing and residential environment would enhance the productive contribution of substantial parts of our population and therefore yield "external economies," quite

¹² The Voluntary Home Mortgage Credit Program was authorized in the Housing Act of 1954 to help provide funds for FHA and VA loans in small communities and remote areas as well as for minority housing in any area. The main *modus operandi* is to funnel loan applications which were previously turned down to lenders co-operating in the program.

apart from social and human values.¹³ In addition, more energetic housing code enforcement would aggravate the pressing problem of rehousing those who live in slums for reasons of economic necessity (by no means all slum dwellers). And minority groups, especially Negroes, are faced in the market with non-price restraints in the form of area and concomitant housing quality restrictions. Hence, our performance standard of more widely shared gains in housing has economic as well as social connotations. No statistics are needed to demonstrate that we have still a long way to go in meeting this standard, though it is clear that housing policy alone cannot solve the problems of poverty, personal or group maladjustments, or prejudice.

Here, we have a monolithic type of federal assistance: the embattled public housing program. The new rental housing project in public ownership and management, usually institutional, designed for long-term use and set apart from the rest of the community, has practically become the only solution offered. This solution has been found wanting not only by many communities but even by a large number of actual and potential beneficiaries.

Our proverbial ingenuity in finding pragmatic solutions to problems by trial and error seems to have failed us. As has been said correctly, a nation can try out only one fiscal policy at a time but there can be many different kinds of public housing policies. 15 We have allowed little experimentation with alternative approaches, such as subsidies to families rather than projects, or the use of existing housing or short-term minimum housing, or expanded social services for problem families, or subsidies for the purchase of low-cost single-family houses rather than rental projects which are expensive to build and operate, or public credit alone instead of cash subsidies. We have yet to redefine what groups of the population subsidized housing should serve in a highlevel economy, as distinguished from the days when the slogan "onethird of the nation ill-fed, ill-clothed and ill-housed" carried greater conviction. By allowing individual localities to experiment with a wide range of methods, it may also be possible to substitute cost criteria for the present physical criteria in determining how far and how fast the

²³ Curiously, one finds this proposition quite often in reports by economists and "conservative" businessmen on missions to underdeveloped countries. But it should also hold for advanced nations.

[&]quot;In addition, federal assistance has been offered in the form of mortgage insurance on specially advantageous credit terms for housing those who are dislocated by urban renewal and similar projects. This device, however, is ineffective for many groups requiring relocation. To the large extent that FNMA under its special assistance program buys the mortgages on relocation housing, the real instrument of assistance is federal credit rather than mortgage insurance.

³⁸ Martin Meyerson and Edward C. Banfield, Politics, Planning and the Public Interest: The Case of Public Housing in Chicago (Glencoe: The Free Press, 1955), p. 283.

nation is willing to go in housing subsidies for selected groups of the population.16

Housing Programs and Economic Stability17

The question of criteria for the adjustment of federal housing programs to the objectives of economic stabilization policy has become the subject of lively debate. According to one view, the commitment of the federal government to assist the housing sector implies what is tantamount to an exemption of this sector from the vicissitudes of economic fluctuations. An opposite view holds that the achievement of better housing is clearly subordinate to the larger objective of stable economic growth.

Conflicting value judgments such as these cannot be wholly resolved in economic terms, but neither can they be resolved without economic criteria. One of these concerns time dimensions. Housing goals, as expressed in the preamble to the basic Housing Act of 1949, can only be attained over a long period of time. Consequently, temporary modifications of the government's support of housing need not seriously interfere with the accomplishment of housing goals. Economic stabilization policies, on the other hand, necessarily have a much shorter time horizon, and unremitting governmental support of housing at times of inflationary pressures can seriously interfere with the attainment of stabilization objectives. These differences in time dimensions themselves suggest that the gains in national welfare resulting from more effective stabilization policies will exceed the gains that can be obtained from uninterrupted efforts to maximize housing goals.

A second and related economic consideration is the effect of temporary restraints of housing credit on the long-term demand for homes. In the case of goods or services with shorter consumption periods or acquired on impulse, the potential demand that is frustrated by tighter credit terms may be killed rather than deferred. In the case of housing, however, short-run credit restraints are likely to result in deferral rather than permanent loss of demand. Few homes are bought on impulse. Consumers adjust the quality of their housing but slowly to changes in their income or asset holdings. The time when a family first purchases a home is conditioned largely by the family life cycle in

¹⁶ On these points, cf. Robert Moore Fisher, op. cit., which provides the first comprehensive analysis of economic aspects of the federal public housing program.

¹⁷ This section draws largely on the author's, Housing Issues in Economic Stabilization Policy (NBER, Occasional Paper 72). See also his paper, "The Role of Residential Capital Formation in Postwar Business Cycles," Conference on Savings and Residential Financing (sponsored by the United States Savings and Loan League), 1959 Proceedings. These papers discuss also the marked fluctuations of residential construction financed by representative decompositions and their relationship to the inflavible maximum interact. government-insured loans and their relationship to the inflexible maximum interest rates on such loans.

which a span of one or two years is negligible. Consequently, most of the demand eliminated by credit restraint is likely to be reactivated when financial conditions become more favorable to borrowers, provided that employment and income remain high.

Third, varying the intensity of government aid to housing is not discriminatory when such action merely modifies temporarily the special benefits conferred on this sector of the economy. If the intensity of federal assistance is at times relaxed in the interest of economic stability, this can be considered a reasonable price for long-run benefits received by all those, including builders, who stand to gain from the preferred status of the housing sector.

Fourth, occasional restraint on the housing sector can be good housing policy as well as a necessary or desirable tool of economic stabilization policy. Maximum output of new residential construction is not the only criterion of good housing policy, at least in the short run. Other criteria are the maintenance of reasonable stability in the housing market itself and the prevention of excessive increases in construction costs and land prices. Incessant stimulation of new building can seriously interfere with these objectives.

Fifth, a policy of incessant stimulation of housing may adversely affect the flow of funds into other "high-priority" sectors of the economy instead of those activities which the proponents of ever normal or ever rising residential building would consider less urgent than housing. Neither business investment nor consumer credit is highly sensitive to the usual moderate changes in the cost of borrowing. Consequently, increased financing for housing in tightening capital markets may draw funds away from the capital improvement programs of state and local governments, which are probably more sensitive to credit, as is housing.

To be sure, all of these considerations must be balanced against the impact of credit restraints and relaxations on residential construction itself. Long-term business planning, continuity of production at optimum scale, and efforts at cost reduction can be frustrated if builders must adjust their operations to discretionary alterations in the intensity of federal aid as well as changes in general credit availability and monetary policy. This point argues for cautious and sparing use of federal housing credit policies for economic stabilization purposes. But it does not vitiate the principle of integrating these policies with general stabilization objectives so long as federal credit aids have a major impact on the housing market.

Need for Reappraisal

In conclusion, I suggest that our federal housing programs are in urgent need of reappraisal which, if not agonizing, ought to be at least

bold, imaginative, and searching. Instead of continuing and expanding activities which were developed to deal with the problems of yesteryear, we must re-examine their place in a high-level economy and in the light of the federal government's commitments under the Employment Act. Such re-examination may still conclude that financial assistance by the federal government is required to achieve socially desirable results as defined by the community-at-large. We may still find that the forces with which we are dealing are so stubborn that compensatory financial aid, the mainstay of the present programs, is the only feasible alternative. The point is that we have insufficiently tested the potentials of that kind of government action which is designed to improve energetically the institutional framework in which the market operates, including local controls, and to attack directly some of the forces which have impinged on the performance of the housing sector, such as the high acquisition cost of housing.

Here are some of the questions such a reappraisal may examine. Should it be the purpose of federal programs to reallocate resources in favor of the housing sector generally, or should federal aid focus on housing assistance to groups deemed to be at a disadvantage? Would sustained federal aid to improve the technology and reduce the cost of construction be more effective in assisting the housing sector than the indirect measures we now employ? How can we make the most of federal assistance by effective quid pro quo arrangements with state and local governments? Is mortgage insurance still necessary to protect lenders against a debacle in the mortgage market when the federal government is committed to a policy of maintaining reasonably full employment, which of itself should protect us from financial disaster? Does the economic position of veterans as a group, as compared to nonveterans, justify the perpetuation of housing benefits for veterans of World War II, which have already been extended far beyond the original expiration date? And if the insurance programs are unnecessary as protective devices but serve other purposes, such as resource reallocation or improved marketability of mortgages or implementation of the Employment Act, are they the best means of accomplishing these purposes? Or should federal mortgage insurance be reserved for investments which the market clearly could not be expected to make without assistance, such as housing for certain groups of the aged, or urban renewal projects, or especially low-cost construction? Has the stress on encouraging home ownership in our programs pushed this type of tenure beyond real consumer preferences and, by promoting suburbia, hastened the very decay of central city areas which the urban renewal program seeks to cure?

Obviously, hard choices will be involved in this kind of reappraisal.

DISCUSSION

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Samuel M. Cohn: Perhaps I shall overstate my differences with Professor Smithies, but I do believe his choice of emphasis is somewhat misleading. First of all, it seems to me that he is much too defeatist about fiscal accomplishments to date, about current developments, and perhaps also about future prospects.

His "regret that we have made remarkably little headway at the high political levels" against the balanced budget dogma fails to give proper weight to a very significant distinction which must be made in dealing with governmental affairs. This distinction was aptly drawn by Herbert Stein, of the Committee for Economic Development, recently when he distinguished between three separate concepts: (1) fiscal talk; (2) fiscal behavior; and (3) fiscal policy. I am afraid Smithies has shot both bolts at the fiscal talk and has glossed too quickly over the actual fiscal behavior. He must have recognized this, because later in his paper he admits to some optimism about the future when he reflects "on the extent to which economic thinking has penetrated the government since World War II."

I submit that during this period the fiscal behavior of the federal government has not been so bad, and has recognized many of the facts of economic life. While the government has not acted in complete accord with the CED's stabilizing budget policy, the annually balanced budget concept in actual practice is a dead duck. The talk lingers. It has some disciplinary value, but it also has some ill effects which are indeed unfortunate.

I, too, deplore that loose and misleading talk—and the virtue which seems to attach itself politically to a stated effort to balance the budget every year, regardless of cost. For the life of me, I cannot imagine why so many people believe the maiden of an annually balanced budget can still be so virtuous. She has cried "rape" so often that an impartial judge would certainly have much reason to wonder about her willingness!

I do not wish to imply that the nation's fiscal behavior is beyond reproach. Certainly it is not. Although surpluses and deficits have occurred in the right years, we still have things to learn about the amount of expenditure-tax change that is needed or can be used as a contribution to general economic stability without at the same time planting the seeds for instability in the early future.

This leads me to what I think is the real crux of my difference in emphasis with Smithies. He implies that the annually balanced budget dogma is the culprit responsible for nondisclosure of government affairs, for budgeting malpractices, and for disruption of defense, foreign aid, and other programs requiring continuity or lengthy periods of planning and execution.

Is the balanced budget the real culprit if public expenditures are too low? Is it not rather the still very much alive credo that the government is much too large and must be cut back—that government is not productive? Or, if it is a little productive (because we have learned things and changed some since the

days of Adam Smith), it certainly is less productive than any private endeavor that can meet the test of the market place—automobile tail fins and rock-'n'-roll recordings included!

Again, is the balanced budget the real culprit if we are spending too much on farm price supports and not enough for defense, water resources, housing, or other services? The real trouble is deeper than this. The balanced budget per se does not explain all the imbalances in our political way of life.

Public activities and budgets portray the wants of our people and the priorities they establish as reflected through our system of representative government. Those who want more, or more costly, defense, foreign aid, public educational services, or other government spending—and I am sure a number of people in this audience do—should not believe the solution to the problem is the overthrow of the balanced budget—especially not in periods of high employment. Nor should they think they can get what they want by cutting ever present waste, inefficiency, and obsolete activities in the bureaucracy. (We should, but the savings available from that source are very limited.) They should, instead, cut through the loose fiscal talk, face the issues squarely, and say: "These things that I want the government to do are worth money to me, and I am willing to pay more taxes to get them." This attitude would certainly indicate that some public services are indeed competitive with private services.

If too many of us believe our present tax bills are too high and therefore nurture the hope that we can get additional services or benefits from the government for nothing, we are doomed to disappointment.

Now, Smithies says that economic growth might do the trick if we want more federal services but "are not prepared to get the additional resources needed . . . by cutting back on consumption" through higher taxes. He then reversed his field by hinting that larger government surpluses might be needed to provide the rate of savings required for such economic growth. He can't have it both ways!

Thus, I get to Smithies' interpretation of Tinbergen's proposition with respect to objectives and instruments. I do not personally have as much objection to the added instruments he mentioned as do many in public life. But I think we would all agree that added instruments—or added governmental controls or regulations, if you will—should not be embraced unnecessarily. Again, it seems to me, we are often forced to choose between federal spending and private spending. Certainly, in his example, a decision in favor of more total federal spending at full employment must mean higher taxes, or some additional control(s), or a leak in the dike. The first two are designed to reduce or limit private real purchases; the third—the leak—undoubtedly curtails both private and public haphazardly.

In this connection, I should point out that the government to a large degree has used Smithies' proposed constant price assumption in many of its expenditure and revenue estimates. He seems to defend as proper anti-inflationary medicine the risk this involves in cutting or slowing down real defense purchases, while the agency awaits supplemental appropriations during periods of price rise. Apparently, this—for him—is the right time to take the risk. Other times and other objectives, of course, he might label "disruptive."

Time does not permit a full review of Smithies' recommendations. Let me say I fully endorse the plea for more stabilizers of the built-in variety and the emphasis on taxation and transfer payments for short-run stabilization purposes. The need for making a distinction between federal programs requiring continuity or needed for long-run growth and those for short-run cyclical stability is also important. But the problem is even more complicated than he implies. Recessions of the post-World War II variety have been short-lived and relatively mild. The federal medicine, if any, needed in such cases is much different from that in a longer, more severe downturn in which business, consumer, and lender confidence becomes very seriously impaired. In the latter type, farm price supports and federal mortgage purchase programs can and should play an important role; in the former, their need is indeed questionable.

I regret Smithies did not consider the one-shot refund of a part of previously paid taxes in his appraisal of the efficacy of tax measures as substitutes for spending in meeting recessions of the 1958 type. And I regret even more his final words that surpluses may not be attainable and that "the best we can do in the long run is to balance the budget." If this is the best we can do, there will be no future to his recommendation for an official economic budget program in which the government would openly propose deficits—or surpluses—for economic reasons.

I would not give up so readily. And as a first step, I want to plead with you not to make balanced budgets the scapegoat for all the loose fiscal talk that prevails. We must agree that the annually balanced budget should not be a blindly accepted dogma, and it cannot be a hard-and-fast rule. But as economists, we have a duty to give government administrators a workable substitute. Smithies pointed to this need when he said that unless we can provide an alternative, "there can be no doubt that expenditures would increase to a level that was economically undesirable and politically demoralizing." Whatever success the CED stabilizing budget policy has had, it has enjoyed in part because it met this test. There is still more that should be done, particularly in view of the provocative questions about the CED policy which Walter Heller raised in the September, 1957, issue of the American Economic Review. Let us bend to the task, and not fight one kind of loose talk with another.

OTTO ECKSTEIN: Professor Bain has treated some of the major issues of economic criteria for selecting water-resource projects with his usual cogency. I agree with virtually everything he says, and find myself in the embarrassing position for a critic of only being able to heap praise. In fact, I think the participants in the controversy now all pretty well agree that an economic criterion for public works projects with marketable output consists of maximizing the present value of output subject to whatever financial constraints are appropriate. The form of constraint must depend on the institutional specifics of the particular public budget. There may be several constraints applicable to different periods. I share with Professor Bain the view that of all the simple

criteria, $\frac{V}{C}$ appears to fit the American case best.

I might only make three comments which are in the nature of additions to his paper. First, in applying budget constraints, there is a question whether the revenues to be generated by a project should be considered. If a project generates scarce budget money in the future, this should be reflected in the economic criterion. In the United States this is not an important issue because, in fact, the revenues generated by projects do not return to the water-resource area. But in underdeveloped countries, where the application of rational economic expenditure criteria is far more important, the ability of a project to generate revenue is significant. These revenues are likely to be available for reinvestment in the future, and therefore add to the ultimate capital accumulation of the country.

Second, the problem of the optimal plan of development over time, i.e., the determination of the order of project starts and of the speed of completion, is an extremely difficult one, which at best may require advanced techniques of dynamic programming. In the absence of an explicit algorithm, we can only rely on solution by exhaustion, by computing the present value of every alternative sequence of development and selecting the best one, or on some sampling technique of solution. Even these solutions suffer from their failure to take into account the additional information that becomes available during the development of the project.

Third, in relation to the choice of interest rate, I see no need to choose between social, or collective, time preference and marginal private taxpayers' preference. The taxpayer's preference, expressed as a foregone opportunity cost stream but valued at the social rate, can be used as a side condition to assure that the public uses yield a present value greater than the private uses.

Let me now turn to some broader issues in the determination of national priorities for public expenditures. I have the feeling that economists have not made a sufficient contribution in this area. At the moment, national priorities are determined, I believe, by three principles.

- 1. Inertia. An old program is a good program, or at least so it seems, judging by what we do. In the context of a budget which must be balanced with constant tax rates, new programs have hard sledding.
- 2. Entrepreneurship. In order for a new program to get started there must at least be some groups eager to promote it. On the one hand, this is simply the proper working of the democratic process; but on the other hand, it means that programs which would help the uneducated and unorganized, who constitute a large proportion of our poor, are likely to be stinted.
- 3. Lack of Vetoes. Such promotional efforts are only likely to succeed if the program encounters relatively few vetoes from the numerous groups in our society that do have substantial veto power. I think a classic instance of the positive working of the principles is the adoption of the enormous road program at a time of budget stringency. Our failure to do more in the field of education after more than a decade of awareness of need is an example of the principles on the negative side.

What has been the economist's contribution to the process of determining national priorities? First, the classical welfare economics approach, applying

marginal principles, computing gains and losses, has been applied in some fields. Without seeking to present a complete list, let me cite some of the major examples. Water resources have proved particularly attractive as a field of study because it is almost a perfect laboratory case for applied welfare economics. In the defense area, suboptimization through operations research has made important contributions. In the fields of education and research, the work of Becker and Griliches and of others represents an important beginning.

National priorities, of course, are never going to be primarily economic. The other dimensions of the problem are too important, and if an optimal economic solution were adopted it would probably be a national disaster. But having said that, the economic performance of our public programs could be improved without loss in the other dimensions.

The classical approach can still be applied to other fields—for example, highways—but I think that a more flexible technique of analysis is going to be necessary for most of the other fields. I think public expenditure analysis can learn a lot from the field of market organization in this respect. The industry study, in which the scheme of analysis is more flexible and more attuned to the specifics of the case, holds high promise for future work. The important paper by Professor Grebler points the way to what can be done in the field of housing, and the work which Professor Bain and his group in California are doing in the water-resource field is very promising. I am sure that similar studies can be conducted in other fields.

Let me conclude by urging economists to develop a greater interest in this range of problems. Government today purchases a fifth of the gross national product and redistributes income through transfer programs of many sorts. It is important that this job be well done. The research opportunities are great and their pursuit constitutes a social service.

NEAL J. HARDY: I am pleased to have this opportunity to make some brief comments on Leo Grebler's paper, "Criteria for Appraising Governmental Housing Programs." It has been my good fortune to have known and worked with Dr. Grebler for more years than I dare say that either he or I care to recollect. I have always found him one of the most thoughtful, thorough, and truly able economists in the field of real-estate and urban economics. The paper which he has delivered today once more reinforces that evaluation.

Dr. Grebler opened his remarks by telling you that his assignment was not unlike a trip into a territory strewn with land mines. I trust in commenting on his subject that I stray no farther from the narrow path between the hazards he enumerated than did he.

I may as well be frank and tell you at the outset that I am one of those so-called "specialists" who tend to endow housing and housing developments with particularly high priorities. I hope, however, that my myopia has not grown quite to the point which he attributes to us.

First of all, may I say that the ten performance standards set forth by Dr. Grebler represent an excellent statement against which we can measure the successful, or unsuccessful, performance of the housing sector in our economy.

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Others might be added, but for purposes of the discussion, they seem to me to set forth the definitions within which our discussion can be most usefully confined.

I agree with Dr. Grebler that we know far too little about the over-all quantitative impact of federal housing programs on residential construction, and I join him in urging that this lack in our knowledge be corrected at the earliest opportunity.

I must comment, however, that I differ somewhat with him in his plainly expressed doubts as to whether mortgage insurance and the FNMA program have contributed to resource allocation in favor of housing. It would seem to me that the record is fairly clear that the several actions taken by the federal government in the early and mid-thirties did a great deal to provide a reasonably sound framework within which private savings have been accumulated at substantial rates for investment in residential construction. I, for one, find it difficult to visualize just how we could have arrived where we are without the basic reforms of mortgage insurance, insurance of savings, the Home Loan Bank System, and the secondary market activities of FNMA. There may be room for argument as to how these programs now operate in a period of high prosperity and capital shortage, but certainly, the record through the immediate post-World War II period seems to leave little doubt that these activities of the federal government lent strong support to substantial resource allocation in the housing field.

I can but underscore my complete agreement with Dr. Grebler in his criticisms of our failure to meet the test of providing for replacement of depreciated housing. Just how we correct this situation is something which leaves me considerably frustrated for the answer seems so simple; yet, the ability to apply it is so universally difficult. I agree equally strongly with him that we have neglected our opportunities to bring about much needed reforms in state laws which inhibit the interregional flow of mortgage funds or which make mortgage loans unnecessarily costly or risky. Again, this situation is one which has long been with us and which I doubt will be soon corrected if we continue to rely on some fifty separate jurisdictions engaging in fifty separate studies in the not very practical hope that the end result will bring about the standardization of legal requirements, which is an absolute prerequisite to a free, interregional flow of mortgage loans.

Perhaps this is an area in which the bold new thinking to which Dr. Grebler refers later in his paper can be applied through federally sponsored devices for the certification of mortgages which certificates could be freely traded without regard to the laws directly controlling mortgage instruments themselves.

If there is one area in which Dr. Grebler and I differ—although I dare say not very much—it is in the area of housing programs and economic stability. For myself, I hold neither to the view that the commitment of the federal government to assist housing implies an exemption of this sector from the vicissitudes of economic fluctuation, nor to the so-called "opposite view" that an achievement of better housing is clearly subordinate to the larger objective of stable economic growth.

Dr. Grebler has done an excellent job in citing five considerations which

tend to rationalize the use of housing for the promotion of stabilization objectives. With none of these do I seriously disagree, but I must comment that what the government has or has not done in terms of direct action in the housing field has been of vastly lesser importance on the trend of housing production, in recent years, than has been the effect of monetary policy. I will not go so far as to say that federal housing policy in times of credit restraint has not had some effect on the course of this sector of our economy. I do maintain, however, that neither administrative actions to curtail credit terms on insured and guaranteed mortgages, nor even the volume of mortgage purchases by the Federal National Mortgage Association has had anything like the impact on the housing sector that has been caused by the application of monetary controls in either periods of general credit availablity or general credit scarcity.

In point of fact, I suppose this is the one point at which I find something missing in Dr. Grebler's paper. He has suggested, for example, that our federal housing programs are in urgent need of reappraisal. With this I thoroughly concur and have myself long advocated. What the answers are, I make no pretense of knowing, but our experience of the last several years seems to prove most conclusively that the depression-born federal housing programs are inadequate or incomplete during periods of high prosperity and chronic capital shortage. Yet, I doubt seriously whether a reappraisal of housing programs as such will give us the answers we are looking for.

Myopic houser though I may be, I cannot, in conscience, look on the problem of improved resource allocation as simply a case of getting, by one means or another, a greater share of our limited resources into the housing field. To the contrary, I think our problem today is a far more fundamental one—and again, I wish I had answers rather than simply unpleasant facts to state. Expressed, no doubt, in oversimple terms, it seems to me the real problem we face today is an inability, under our existing control methods, to make possible more equitable resource application, not only to housing but, as Dr. Grebler himself suggests, to other very real areas of need such as the capital improvement programs of state and local governments. The reappraisal which I think we need is one which goes to the whole unpleasant, controversial, and prickly question as to what further needs to be done in terms of additional tools or powers in the field of monetary policy.

It may well be that such a reappraisal as I am suggesting will conclude that things had better be left as they are, and that we must face the realities of an uneven, if not an inequitable, allocation of limited capital resources. If this is the conclusion, then it follows logically that housing investment and housing production will continue to operate with little regard to stability in this sector of the economy. On the other hand, we may conclude that there are, in fact, areas of social priority which cannot be ignored and that we must assume the responsibility, however unpleasant it may turn out to be, of adopting more control mechanisms in the interests not only of housing but of a more rational development of our economy as a whole.

INVESTING IN EDUCATION AND RESEARCH

THE ROLE OF SCIENTIFIC RESEARCH IN STIMULATING ECONOMIC PROGRESS

By IRVING H. SIEGEL Council of Economic Advisers

This paper is organized as a commentary on the terms making up the title assigned to it in the program. Such an organization permits at least the mention of many matters that cannot be treated in the time and space allowed. For convenience, the terms are discussed in an order that reverses their sequence in the title.

The meaning of economic progress is often considered obvious, or at least sufficiently well understood to require no special comment. This concept is perhaps characterized fully by three rising trends: an increase in output per capita; an increase in output per unit of input, especially labor; and an increase in the specific varieties of known, available, or actually used inputs, production processes, equipment, or final products.

The first of these trends may be represented not only by the broadest of aggregate measures but also, and perhaps more properly, by indicators restricted to current welfare opportunities. Thus, the numerator may plausibly be limited to consumer oriented output; and the denominator, as in a recent study by Goldsmith, to standardized consumer units (e.g., equivalent adult males). Such welfare indicators may be refined, in the manner of Kuznets,2 by the inclusion of leisure as an output co-ordinate with goods and services.

The second and third trends are commonly recognized as indicators of "technological progress"—a concept which in some situations must be differentiated from "economic progress." Since the usual productivity index numbers are not designed to reveal the marginal net contributions of factor inputs, a labor productivity series must be viewed simply as a humanistic measure that sums up the significance for homo laborans of all changes in the organization of production (especially the substitution of capital for the current expenditure of man-hours). Such a series, furthermore, should not be regarded as necessarily in-

Proceedings, May, 1954.

¹ R. W. Goldsmith, "National Product and Income: Long-Term Trends," Hearings before the Joint Economic Committee, 86th Cong., 1st Sess., Part II, April 7-10, 1959.

² S. Kuznets, "Long-Term Changes in the National Income of the United States of America since 1870," Income and Wealth of the United States: Trends and Structure (Bowes and Bowes, Cambridge, England, 1952).

⁸ I. H. Siegel, "Conditions of American Technological Progress," A.E.A. Papers and Proceedings, Moy. 1054

ferior to an index alleged to measure total productivity. Both really provide different views of the same phenomenon, and the index of socalled "total" productivity has its own characteristic frailties (e.g., inclusion of crude series for capital input, failure to take explicit account of entrepreneurial input, and neglect of unremunerated but technically effective intangible inputs).4

Additional problems of meaningful measurement need not be catalogued here; but, since economic progress has become an important topic of domestic politics and international propaganda, attention should be called to the opportunity to improve the record for the United States by the simple stratagem of recomputing indexes according to more favorable, but still permissible, rules. In indexes of industrial production, it may be desirable not only to take account of true quality improvements but also to adopt alternatives to the measurement techniques of "chaining" and "deflation," which lead to an understatement of the influence of new products. Some years ago, I suggested a task which still is timely and may now even merit a special priority: the computation of a variant production index for manufacturing that takes advantage of the same measurement conventions (especially with regard to new products and new models) that are used in the Soviet indexes.⁵ Furthermore, we should have variant measures of real output that directly acknowledge the net creation of intangible capital values and national wealth through successful research, education, accumulation of technical know-how and job skills, the adoption of superior production functions, and the successful conduct of mineral survey, exploration, and development activities.

The remark just made and the earlier statement of the third criterion of economic progress hint at the importance of information as a condition (a necessary but, as we shall stress later, an insufficient one) and as a consequence of such progress. Indeed, information is both the raw material and immediate product of research considered as an economic activity; and it stands in a similar dual relationship to such activities as education and telecommunications. It is increasingly recognized nowadays as economic "stuff," like matter and energy.

The appearance of the word "stimulating" in the title should not suggest acceptance of the popular biases of technological determinism and technological "rah-rahism." A neutral word that has the connotation of "affecting" would have been preferable, for it allows research to have

1937, in J. of Econ. Hist., Summer, 1952.

⁴ I. H. Siegel, Concepts and Measurement of Production and Productivity (U.S. Bur. of Labor Statis., Mar., 1952); and S. Fabricant, Basic Facts on Productivity Change, Occasional Paper No. 63 (NBER, 1959).

⁵ Review of A. Gerschenkron, A Dollar Index of Soviet Machinery Output, 1927-28 to

restraining as well as stimulating influences.3

The word stimulating may be objectionable on another ground too: its failure to suggest the interaction of research and economic progress. In any true system involving broad abstract categories, the arrows of influence should be allowed to point in both directions rather than only one, especially if long-term relationships are of interest.3 The influence of economic factors on research is as worthy of attention as the role of research.

For fullest relevancy to economic progress, the term "scientific research" should be construed as an abbreviation of a longer expression like "scientific and engineering research and development." It should encompass not only the quest for theoretical knowledge but also the problem-solving efforts that pave the way from principle to practice, the construction of experimental facilities, and the preparation of working models and prototypes.

So amended and interpreted, scientific research—or simply research —covers a large and expanding volume of expenditures. According to revised figures recently published by the National Science Foundation, the obligations of the federal government alone neared 8 billion dollars in fiscal year 1959 and are expected to exceed this total in 1960.6 Research programs involving outlays of additional billions of dollars are financed by profit and nonprofit organizations, which also spend the bulk of the federal funds under contractual arrangements. The support of research by business firms is encouraged by various legislative provisions, such as Section 174 of the Internal Revenue Code of 1954, amendments made to this Code in August, 1957, and September, 1958, and Section 9 of the Small Business Act of 1958.

Although the annual outlays of companies for research are often expended rather than amortized, they may properly be treated as quasiinvestments having an uncertain net yield over an indefinite future period. Combined with tangible capital and other inputs, the knowledge financed by research may contribute to the generation of a discountable income stream. One estimate of the net current private or social value of the expected contribution of research is, of course, the very expenditure for research. But this estimate may prove far from correct. For example, the market prospects of processes or products launched after successful completion of research may be grossly misjudged, especially if interfirm competition through research becomes common and leads to the multiplication of close substitutes. Furthermore, future costs, taxes, and prices cannot be firmly forecast. Finally, computations in-

^{*}Federal Fund for Science: VIII. The Federal Research and Development Budget, Fiscal Years 1958, 1959, and 1960 (Nat. Sci. Found., 1959).

*I. H. Siegel, "Technological Change and Long-Run Forecasting," J. of Bus. Univ. of Chicago," July, 1953.

tended to show the value of research are likely to neglect the net contribution made to the income stream by pertinent complementary or underlying knowledge that is free to all users or that has already been sold once by the user to a sponsor (e.g., to the government); to neglect incidental costs of progress diffused to others through markets (e.g., obsolescence) or through public institutions (e.g., unemployment compensation); and to neglect benefits that may accrue at such distant times and in such contexts as to defy either appropriation or evaluation by the innovator. Additional analytical difficulties are suggested by Machlup's discussion of private and social costs and values in connection with inventions.8

Even if good price corrections could be made, the increase in research and development expenditures may not give a clear insight into the growth of knowledge-creating activities in our nation in recent years. The figures do reflect, of course, something that is new-large-scale federal support, especially for defense oriented research activities. But the rise of private business outlays for research in part reflects the formalization of activities of a kind often performed in the past. This formalization has been encouraged by our tax laws, including the excess profit levies of the World War II and Korean periods. On the other hand, small firms, which normally do not have formal research programs, commonly engage in quasi-research activities that may lead to valuable technical know-how,9 and the cost of such activities escapes statistical notice. Finally, it may be suggested that the tightening of immigration has in recent decades necessitated the devotion of some domestic funds to the development of ideas and skills of the kind we once got free.

The influence of research on economic progress is not so unequivocal, automatic, and preponderant as the popular literature takes for granted. The direct product of research is, of course, information—not investment in new processes, equipment, materials, or products. Accordingly, it directly satisfies only a part of the third criterion of economic progress stated earlier; and it does not necessarily lead to the satisfaction of the other two criteria. That is, research clearly adds to the stock of known and often usable specific inputs, outputs, and processes; but it does not guarantee actual innovation and widening commercial use, or rising output per capita, or rising productivity.

The main role of research is to multiply technical and economic opportunities, but the quality of entrepreneurship, market conditions,

⁸ F. Machlup, An Economic Review of the Patent System, Study No. 15, Senate Committee on the Judiciary, 85th Cong., 2nd Sess., 1958.

⁹ Comments by I. H. Siegel on "Patents and Other Factors in the Creation and Growth of Small Firms" in Patent, Trademark and Copyright Journal of Research and Education (1950 Conference Number). (1959 Conference Number).

and other factors determine whether or not such opportunities will be realized. Professor Slichter, whose presence at meetings such as this will long be missed, often stressed that research increases the "capacity" of an economy for investment and consumption. 10 His enthusiastic and elliptical statements should not give the impression that research inevitably sets off a sequence of actions leading to successful innovation and commercial use. Well-known writings of Schumpeter, Maclaurin, Gilfillan, and others should warn us against the fallacy of automaticity.

We must also reject extravagant statements that are sometimes made concerning the magnitude of past and expected economic impacts of research. According to one extreme judgment, "research may be the most important single factor in economic growth in the United States"; and "there would have been a cumulative loss of national products of \$400 to \$800 billion during the period 1928-53 in the absence of research." We should also distrust correlations between national output and expenditures on formal research programs (these expenditures, incidentally, appear not to be completely recorded in the private sector's contribution to gross national expenditures); and we should recognize the limited dependability, for purposes of extrapolation, of relationships between corporate investment and research outlays.

Statements made about "galloping" technological change due to rising research outlays should be taken with a grain of skepticism. Research, like oil exploration, has its dry holes; and, since it is also easier to accumulate research results than to put them into effect, the United States is bound to remain an "underdeveloped nation" of a special kind. Although research permits reduction of the time interval between decisions to invent and the effective use of inventions, many of the novelties involved are relatively trivial; and the interval for "spontaneous" inventions may remain quite long. It is also instructive to consider the difficulty encountered in supplementing conventional electric power generation based on coal with power generation by nuclear fission, despite government subsidies; and to consider the increasing interest shown at this time in thermocouples, thermionic converters, fuel cells, and other electric power systems that are based on principles well known for many decades, even more than a century. When we hear that innovations promised by research will quickly and radically change our total technology and way of life, we should note that petroleum, coal, sulfur, iron ore, and many other familiar basic materials will also be needed in increasing quantities; that the newness

18, 1955.

¹⁰ S. H. Slichter, "Technological Research as Related to the Growth and Stability of the Economy," in *Proceedings of a Conf. on Res. and Develop. and Its Impact on the Economy* (Nat. Sci. Found., 1958).

¹¹ R. H. Ewell, "Role of Research in Economic Growth," *Chem. and Eng. News*, July

of what is called "new" is limited; that profitability remains a relevant consideration; and that there are "proportions" which our society will try to conserve. There is a lesson in the favorable effect of efforts to develop atomic energy on the demand for ordinary electrical energy. And, when we are told that productivity will rise by leaps and bounds, we should consider the recent unglamorous record, despite rising research outlays and the well-publicized progress of automation; and we should also recall the good productivity record of the relatively unsophisticated twenties.

In concluding this paper, I wish to return to the manifold and extensive contributions of the federal government, which may be much more significant for economic progress, in terms of output per capita and per unit of input, than the growth of privately-financed research. Apart from the magnitude of federal research outlays, we should note that costly projects envisaging high-grade performance for defense purposes are often pressed with special vigor to the point of early application. Furthermore, as has often been emphasized, 12 numerous governmentsponsored projects conducted in private laboratories have great civilian usefulness; and federal support leaves many companies well situated, with respect to private costs, patents, know-how, and worker skills, for ventures in civilian application. When we look outside the realms of defense and taxation, the incentives provided by government in the case of agriculture are outstanding. Here, policies are pursued that not only encourage productivity advance but also help to maintain prices—that speed the engine of economic progress and at the same time apply stronger brakes. This ambiguous experience should be studied in connection with pleas for larger research expenditures on behalf of faster economic growth in a free society.13 There is a limit even to the magic that can be performed through government arrangements for privatization of the benefits of publicly-financed research and for socialization of the private costs of technological change.

Defense Spending and the U. S. Economy, 2 volumes, Staff Paper ORO-SP-57, Johns Hopkins Univ. Op. Res. Office, May and June, 1958; and App. F, Economic Report of the President, Jan., 1954.
 H. H. Villard, "Competition, Oligopoly, and Research," J.P.E., Dec., 1958.

UNDERINVESTMENT IN COLLEGE EDUCATION?*

By GARY S. BECKER Columbia University

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In the last few years the United States has become increasingly conscious of its educational program and policies. Not only have Congress, state legislatures, and local bodies paid greater attention to this issue, but large numbers of books, articles, talks, and academic studies have also been devoted to it. This concern has been stimulated by developments in the cold war which apparently have increased the power of the Soviet Union relative to the United States. These developments are primarily the rapid economic growth of the Soviet Union in the postwar period and their obvious success in missiles and space technology.

The near panic in the United States engendered by the more spectacular Soviet accomplishments has in turn spawned a re-examination of American policies and procedures relating to economic growth and military technology. Re-examinations begot by panic almost always overestimate and overstress weaknesses and underestimate points of strength. It is perhaps not surprising, therefore, that most recent studies of American education have found it seriously deficient at all levels and in most aspects, be it the effort required, the subjects pursued, or the amount given. It is widely believed that not enough is spent on education, especially at the college and postgraduate levels, that too few of the ablest high school graduates continue their studies, that school curricula at all levels are insufficiently challenging, and that more students should be majoring in the natural sciences and engineering.

For some time now I have been conducting a study for the National Bureau of Economic Research of investment in and returns to education in the United States, especially at the college level. This study is not directly concerned with educational policy but some of the results may have relevance to the issues currently being discussed. They seem to be especially relevant in determining whether too little is spent on college education and whether the quality of our college students could be improved. This paper discusses these questions in light of the contribution of college graduates to economic growth and military technology.

The concept of economic growth used here follows that used in calcu-

^{*}I am indebted to A. F. Burns, S. Fabricant, Z. Griliches, J. Mincer, and T. W. Schultz for very helpful comments. Needless to say, I alone am responsible for any conclusions reached.

lations of national income and in comparisons of the economic performance of the Soviets and the United States, and excludes, among other things, nonmonetary income. In restricting this discussion to economic growth and military technology we thus exclude the effect of education on nonmonetary returns as well as on democratic government, equality of opportunity, culture, etc. The effects on growth and technology have been greatly emphasized recently; so it is especially important to discuss them. This limitation does mean, however, that we are not attempting a complete analysis or evaluation of the effects of college expenditures. A detailed derivation of the results used here will be found in the larger study to be published by the National Bureau.

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The economic effects of education can be divided into the effect on the incomes of persons receiving education and the effect on the incomes of others. This distinction largely corresponds to the distinction between private and social (i.e., external) or direct and indirect effects. Data from the last two Censuses and from other surveys giving the incomes of persons with different amounts of education make it possible to form a judgment about the direct economic effects. The Census data giving the incomes of male college and high school graduates were used to estimate the direct return to college after being adjusted for other differences between high school and college graduates, such as in ability, race, unemployment, and mortality.

The average return from college so computed is related to the average cost of college, the latter including foregone earnings or opportunity costs as well as direct college costs. Returns are related to costs by an internal rate of return—the rate of discount which equates the present value of returns and costs. In other words, it is the rate of return earned by the average college graduate on his college education. If this rate of return was significantly higher than the rate earned on tangible capital, there would be evidence of underinvestment in college education.

The rate of return relevant to a person deciding whether to go to college is a private rate, computed for private returns net of income taxes and for private costs. This was about 12½ per cent in 1940 and 10 per cent in 1950 for urban white males. The difference between these rates resulted almost entirely from the growth in the personal income tax during the forties. The rate of return in 1940, and to a lesser extent in 1950, seems large and is probably larger than the average rate earned on tangible capital. (Some evidence on this is presented shortly.)

But this is not the relevant rate in determining if there is underinvestment in education. First of all, the rate of return should be computed on total college costs, not only on those paid by students. Since in 1940 and 1950 students paid only about two-thirds of these costs, there is a considerable difference between the rates earned on private and on total costs. Second, while returns collected by the state in the form of personal income tax payments are in principle an external return, it is convenient to adjust for them now, especially since this eliminates most of the difference between the rates of return in 1940 and 1950. If then the before-tax return to college is related to the total cost of college, a rate of return of about 9 per cent is found for both 1940 and 1950. The adjustment for taxes raised the return in 1950 to about the same level as in 1940, but the adjustment for private and public subsidies to colleges reduced both rates about three percentage points. The rate of return no longer seems especially high in either year and it is an open question whether it is higher than the return on tangible capital.

Even 9 per cent is probably too high an estimate of the return to all college graduates since it refers only to urban male whites. The rate of return to nonwhites seems to be about two percentage points lower than this.¹ I made no estimates of the return to women and rural graduates and know of none made by others, but since women participate in the labor force less than men, the direct money return to them is probably much less than to men.² The average return to rural graduates is probably also less than that to urban graduates. Thus the average return to all graduates would be lower than the 9 per cent return to urban white males. That this difference might be substantial is evident, not only from the presumed large difference in returns to urban white males and others, but also from the fact that the former are only about 45 per cent of all graduates.

The average return on college expenditures could be compared to the returns on almost an endless variety of tangible capital goods, ranging from consumers' durables to government capital. It is easiest—and perhaps for our purposes most relevant—to compare it to the average return on capital owned by business enterprises. George Stigler has been preparing estimates of the return to assets owned by manufacturing corporations. Preliminary results indicate that the rate of return on these assets, after payment of the corporate income tax, averaged about 7 per cent, both from 1938 to 1947 and from 1948 to 1954. This does not seem, however, to be the relevant rate to compare with the less than 9 per cent earned on college capital which was computed before

¹ Presumably, the difference between the return to whites and nonwhites partly results from discrimination against nonwhites.

²A woman receives indirect returns from college if it enables her to marry a man with a higher income than she would have married if she did not go to college. These returns may be substantial and should be considered when a woman decides whether to go to college. It is not obvious that the total return to women graduates is much less than that to men; such a comparison would require data on the family incomes of the average male and female college graduates rather than on their personal incomes.

the deduction of income taxes. The latter should be compared with the return before payment of the corporate income tax. During this period, the before-tax return of manufacturing corporations averaged more than 12 per cent of their total assets. The data for nonmanufacturing corporations are less readily available and I do not have an estimate of the return to them. But since corporate income tax rates were so high during this period, it is extremely unlikely that all corporations averaged less than 10 per cent or greater than 13 per cent before taxes. Although even less is known about unincorporated enterprises, it is unlikely that their rate of return averaged much less than 5 per cent or greater than 8 per cent.

The average rate of return to business capital as a whole depends on the rates of return to the corporate and unincorporated sectors and on the relative importance of each sector. It would appear that corporate capital is about 60 per cent of all business capital. If this measures the relative importance of the corporate sector and if 10 and 5 per cent measure the average returns to corporate and unincorporated capital, then the average return to all business capital would be 8 per cent.

The substantial difference between these estimates and those published by others results not from difference in the basic data but in the operations performed. Most studies use private college costs rather than total costs, make no adjustment for the differential ability of college graduates, deal only with urban white or all urban males, and use a long-term interest rate to measure the rate of return elsewhere. They estimate the return to college education at about 15 per cent, and elsewhere at about 5 per cent, clearly suggesting underinvestment in college education. Using total costs reduces the rate of return on college to about 11 per cent; adjusting for differential ability reduces it further to about 9 per cent, and including nonwhites, females, and rural persons reduces it still further. On the other hand, the before-tax rate of return to business is much higher than the long-term interest rate because of risk and liquidity premiums and the heavy corporate income tax. The average rates of return to business and to college education—adjusted for these factors—do not seem very far apart.

The evidence on direct returns is limited and these estimates of direct returns subject to considerable error, but it would appear that direct returns alone cannot justify a large increase in expenditures on college education relative to expenditures on business capital. To justify large increases it is necessary to show either that improved evidence would widen the difference between the estimated returns to college and business capital or that indirect (i.e., external) returns are much larger for college than for business capital. The direct return to college was estimated from the incomes of persons differing in age and education;

ideally one would like to have the lifetime incomes of persons known to differ only in education. Improvements in panel techniques and in our knowledge of the abilities of different persons may someday produce evidence close to the ideal. It remains to be seen, however, whether our conclusion about the relative returns to college and business capital is greatly changed.

External or indirect effects are very embarrassing to the economist, since his theories say little about them, he has few techniques for measuring them, and he usually does not even think that he knows much about them. In particular, little is known about the external effects from college education, although it is easy to give some examples. Thus college graduates did the pioneering work in molecular physics, and it may eventually benefit (or hurt) everyone. Einstein, Fermi, and the other pioneers received only a small fraction of the total increase (or decrease) in income resulting from their work. But it is much easier to give these examples than to assess their quantitative importance or, what is even more difficult, to compare them with external effects from business capital. Some maintain, quite persuasively, that college education had little to do with American economic growth throughout most of its history; others, equally persuasive, point to the importance of science in recent years and argue that future growth is closely related to scientific achievement; still others cite the laboratory and general increasing returns as examples of the sweeping external economies from investments in tangible capital.

Since direct returns alone do not seem to indicate underinvestment in education, those arguing this have to rely heavily on external returns. These may well be very important, but in light of our ignorance it is not surprising that no one has yet demonstrated that they are (or are not) sufficiently important to push the total return from college education much above the return elsewhere. It is this ignorance about external returns which prevents any firm judgment about the adequacy of expenditures on college education.

Even those maintaining that external economic and military effects are important would not maintain that they are equally important in all college specialties. But there would probably be little agreement on which specialties were likely to produce these effects, and with our present knowledge it would be impossible to prove that any specialty—no matter how removed it seems from economic and military questions—was unlikely to do so. Recent discussions of the role of college education in the cold war have, however, tended to emphasize scientific specialties to the exclusion of most others, and it is possible to determine

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whether important external economic and military returns³ from science alone would imply large-scale underinvestment in college education.

Science majors include persons majoring in natural science, mathematics, engineering, and applied biology, and in recent years they received about one-quarter of all bachelor's and first professional degrees.⁴ This is probably a large overestimate of the number likely to produce external economies. Only science majors with advanced graduate training are likely to, but less than 5 per cent of all science graduates go on for their doctorates. Scientists are more likely to produce these economies if they engage in research and development but just about 25 per cent of all scientists are so engaged. Thus it would seem that well under half of all science majors or under 13 per cent of all college graduates have a reasonable chance of producing important external economies.

It was seen that the average direct return to college graduates is about the same as the average direct return to business capital. If the direct return to scientists was no lower than the direct return to other graduates and if the external military and economic effects from scientists were important, the total return to scientists would be greater than the returns to business capital. There would be underinvestment in scientists, and government assistance to the scientific field would be required to attain a more optimal allocation of capital. The number of scientists would be increased partly at the expense of business investment, partly at the expense of current consumption, and perhaps partly at the expense of other professions.

The important point to note, however, is that even a large underinvestment in scientists implies only a small underinvestment in college education as a whole. For example, the number of scientists with prospects of producing external effects could be increased by as much as

⁴Business had about 14 per cent, education about 20 per cent, and humanities and social sciences about 25 per cent of all first degrees.

⁵Few systematic studies have been made of the return to different college specialties.

⁵ Few systematic studies have been made of the return to different college specialties. According to the 1950 Census the average income of engineers was about \$5,100, much lower than the \$6,600 average income of college graduates. This seems to indicate that the direct money return to engineering graduates is less than that to other graduates. But about 40 per cent of the Census engineers are not college graduates, and they may receive less income than graduate engineers simply because they have less training. Moreover, even if they have the same total amount of training—received on the job rather than in college—they would tend to report lower incomes because their incomes would be net of training costs, while the reported incomes of graduate engineers (and other college graduates) would be gross of training costs.

⁸ If all persons working on military technology were employed by the government and if salaries measured expected (or actual) military contribution, there would be no external military effects since the full marginal productivity would be directly measured by salaries. This argument clearly holds for all government employees regardless of their specialty.

50 per cent—a very sizable increase—and yet less than a 7 per cent increase in the total number of college graduates would be required. The 7 per cent figure is arrived at by assuming that none of the increase in scientists is at the expense of other college specialties and that a full 13 per cent of all graduates fall into the relevant "scientist" category. Even 7 per cent must, therefore, be considered a liberal upper estimate. So the current demand for a large increase in scientists (or, more generally, expenditures on scientific training) to stimulate development could be met with a very modest increase in total expenditures on college education. This does not mean that underinvestment in scientists is unimportant, but only that it could be corrected with a relatively small expenditure.

III

It is widely believed that the quality of the average college student could be substantially improved and that this would greatly aid our economic and military development. The available evidence does indicate that many who do not go to college rank higher in I.Q. or grades than many who do. For example, according to one study, 21 per cent of high school graduates who do not go to college have I.Q.'s over 120, while 50 per cent of college graduates have I.Q.'s less than 120. A similar picture emerges for grades.

Such evidence alone does not demonstrate that an improvement in quality would aid progress, although it is almost universally accepted as sufficient evidence. If ability and education were substitutes rather than complements,⁸ able persons would receive less than the average rate of return from college, and an improvement in quality would have an adverse effect on progress.⁹ Some limited evidence on incomes ob-

⁶I have abstracted from the increase in administrators, teachers, etc., that would accompany a 50 per cent increase in scientists. This omission partly offsets the upward biases in the estimate.

⁷Thus about 14 per cent of high school graduates ranked in the top 20 per cent of their high school class, while 59 per cent of college graduates ranked below the top 20 per cent of their high school class.

⁸ Let Y = f(A,E), where Y is the income of a person with an education equal to E and ability equal to A. Education and ability would be substitutes if

$$\frac{\partial (\partial Y/\partial E)}{\partial A} = \frac{\partial^2 Y}{\partial A \partial E} = \frac{\partial (\partial Y/\partial A)}{\partial E} < 0$$

complements if the inequality were reversed, and independent inputs if equality held.

⁹ To a first approximation

$$g = iC$$

where g is the average gain per unit time from college training, C is the cost of college, and i is the internal rate of return on college costs. If these costs were the same for all (actually they would be larger for able persons since opportunity costs would be greater for them), then

$$g_1 \gtrless g_h$$
 as $i_1 \gtrless i_h$,

where g_1 and g_h are the gains and i_h are the rates of return to persons of low and high ability, respectively.

tained by the Commission on Human Resources and Advanced Training indicates, however, that able persons receive a greater than average direct return from college; so ability and education do seem to be complements. This evidence on incomes is supported by evidence from the supply side. If able persons really receive a higher return from college, they should have a greater incentive to go to college, and the fraction of able high school graduates going to college would be larger than the fraction of all graduates. This appears to be true, for the I.Q. and grades of entering college students is much higher than that of all high school graduates. There is probably an even greater difference in the indirect or external returns from college since persons of superior ability are usually required in the development of important ideas and inventions. Therefore, the total rate of return from college would seem to be positively correlated with I.Q.

There is considerable variation in the return to college and high school graduates of the same I.Q. or grades. It might be that most of the persons with high I.Q. or grades who do not go to college correctly anticipate a lower return from college than received by those who do go. If so, an increase in the number of high I.Q. or grade persons going to college might reduce the average return from college, even though there was a positive (but less than perfect) correlation between I.Q. or grades and returns. Both empirical and theoretical evidence indicate, however, that many of them do not go for reasons largely unrelated to the return that would be received. Most come from low-income and low-education families, and it is difficult to believe that their return from college would be so much lower than the return to equally "able" persons from wealthier and more educated families. Theoretical arguments support this conclusion. Economists have long stressed that imperfections in the capital market limit the amount invested in human beings through education and other kinds of training. These imperfections clearly would be most effective in low-income families and would help explain why a disproportionately large number of the able persons without a college education come from low-income families. Moreover, for economic and other reasons, college students are usually very young, in their late teens or early twenties, and young people tend to have relatively little knowledge of the economic opportunities available and of the returns to different investments. It is difficult to anticipate the return from college education because it has a large variance and accrues over a very long period; it is especially difficult for children from lower strata families since they are more ignorant of the returns to college education.10

 $^{^{20}\,\}mathrm{They}$ may also receive less nonpecuniary income from college education than do children from upper strata families.

It appears, therefore, that the average rate of return from a college education would be increased by an improvement in the quality of college students. How should this improvement be achieved? A full answer would take us way beyond the scope of this paper, but it is clear without much analysis that the appropriate policy would depend on why some able youngsters do not go to college. If imperfections in the capital market were primarily responsible, a policy designed to improve this market would be emphasized. If, on the other hand, ignorance about the returns from college were responsible, a policy designed to spread such information, especially among low-income families, would be emphasized.

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Let me conclude by briefly summarizing the discussion. Several aspects of college education in the United States were examined in terms of their contribution to economic and military progress. The limited available evidence did not reveal any significant discrepancy between the direct returns to college education and business capital, and thus direct returns alone do not seem to justify increased college expenditures. This puts the burden on external or indirect returns since they would have to be important to justify increased expenditures. Unfortunately, very little is known about them; so a firm judgment about the extent of underinvestment in college education is not possible.

Many recent discussions have emphasized the external contributions of scientists to economic and military progress and have called for large increases in scientific personnel. Such an increase could be accomplished with a small increase in total college expenditures. A large increase in expenditures would be warranted only if external returns were produced by a much larger fraction of all college graduates.

A sizable fraction of all persons with high I.Q.'s or grades do not go to college after graduating from high school. It appears that an increase in the fraction of able persons going to college would raise the average return from college. An improvement in the quality of college students may well be an effective way to raise the contribution of college education to progress.

THE OUTLOOK FOR EXPENDITURES ON RESEARCH AND DEVELOPMENT DURING THE NEXT DECADE*

By DEXTER M. KEEZER McGraw-Hill Publishing Company

Our assignment on this occasion is to make a ten-year forecast of expenditures for scientific research and development in the United States.

In doing so, we shall use the concepts of scientific research and development devised by the National Science Foundation and employed in its surveys and studies of this range of activity. The concept of research and development, subsequently to be abbreviated as R and D, which the Foundation uses in its studies of industrial research and development "includes basic and applied research in the sciences (including medicine) and in engineering, and design and development of prototypes and processes. It does not include nontechnological activities and technical service, such as quality control, routine product testing, market research, sales promotion, sales service, geological and geophysical exploration, or research in the social sciences or psychology." In its studies of government R and D and that of nonprofit institutions, the Foundation includes in its concept research in the social sciences.

Whether research in the social sciences is included or left out makes relatively little difference in the totals of expenditures for R and D. Social science research is only a small drop in the total R and D bucket. In a subversive way, this very disproportion may ultimately prove to be one of the most significant aspects of the total development of R and D. We have in mind, of course, the tremendous changes which scientific R and D is making in our physical environment without any balancing by systematic study of what it is doing to the human beings involved.

Both the National Science Foundation figures on the cost of R and D and our own figures cover many indirect costs, as well as the direct R and D costs. For example, service and supporting costs are included. Thus salaries of stenographers and file clerks assigned to R and D sections are part of the total. In addition, a reasonable share of overhead is also included. Thus administrative costs, space charges or rent, and even depreciation on research buildings and equipment are part of the total R and D cost. However, our R and D figures include only those capital costs that are allocated to the current research effort (i.e., depreciation charges). They do not include the original capital expenditures for research buildings and equipment which are charged to capital account.

^{*}A joint paper, in collaboration with Douglas Greenwald, Chief Statistician, and Robert P. Ulin, Senior Economist, Dept. of Econ., McGraw-Hill Pub. Co., Inc.

Our principal qualifications to carry out our forecasting assignment are probably these two:

1. For a number of years we have made annual surveys of the plans of business firms to make expenditures for R and D and the degree to which plans have been fulfilled. These operations have given us some knowledge of the outlook for expenditures for R and D.

Our studies of plans and performance in the field of R and D were an outgrowth of our continuing studies and surveys in the field of business investment in new producing facilities. We recognized that what is done in the field of R and D has a major bearing on what will be done in the field of business investment in new producing facilities subsequently.

We also had no difficulty in seeing that what is going on and is in prospect in the field of R and D constitutes what is probably the most dramatic as well as the most dynamic aspect of the American economy today. It is a shame that, of themselves, the words research and development are so static and uninspiring. For they tend to damp down and blur their true significance.

2. We are courageous enough, or, as many of you will feel, foolhardy enough, to attempt a ten-year forecast of R and D.

When it comes to forecasting, we do not share the diffidence of most of our academic confreres. As we observe them, they concentrate primarily on what has been happening and is happening and shrink from forecasting until they think they know. This means that, as a practical matter, they do very little forecasting.

As business economists we must do forecasting. It is a key element of business planning. Also, we find that an attempt to make a forecast can be quite as good an analytical device and a better teaching device than an analysis concentrated on the historical record. In fact, an effort to forecast what will be the price of copper or coffee a year or two hence can be made to constitute not only a very good course in economics but pretty much the whole of the social sciences. And it would be a course which has an obvious relevance which a backward looking course sometimes seems to lack.

We are fully aware, of course, of the great limitations of the materials with which we must work in making a forecast of R and D. The quality of the information about current expenditures for R and D leaves a great deal to be desired. Also, for purposes of analysis and forecasting, the going concept of R and D is an extremely cumbersome instrument. As has been indicated, it covers not only operations of decidedly differ-

¹ Douglas Greenwald, "The Annual McGraw-Hill Research and Development Survey," in *Methodology of Statistics on Research and Development* (Nat. Sci. Found., 1959, pp. 53-55).

ent character, such as basic research and product development, but also operations which respond to quite different incentives and economic forces.

If there is a unifying element of the going concept of R and D, it probably is that all of it, in one way and another, is directed to innovation of one kind or another. But much of the innovation involved is that attendant upon the cold war which means that the forecasting of it involves the appraisal of forces and attitudes as mysterious and remote as those stemming from Moscow and Peiping.

Happily there is work in progress on the forecasting of expenditures for R and D which will lead to at least a much more polished product, particularly in the area of industrial R and D, than we can make available today. Professor Yale Brozen, of the Graduate School of Business of the University of Chicago, who, so far as we know, has been the leading pioneer in this field of inquiry, has in charge an impressive range of such work.²

In the meantime, no more than a rough and ready forecast of R and D expenditures for any period beyond the immediate future is possible. But, clearly labeled and recognized as just that, a longer range forecast is, we believe, worth making.

We propose to deal with the subject of research and development under three broad headings: (1) a forecast of the probable increase in R and D expenditures over the next decade, (2) an analysis of the forces that are working to bring about this increase, particularly in the area of private business expenditures for R and D, and (3) a few summary comments on the implications of these trends in the growth of R and D expenditures for business and public policies.

A Forecast of Research and Development Expenditures

We have already noted that all forecasts of R and D expenditures must be given in terms of data that are admittedly shaky—both as to coverage and definition. Nevertheless, we shall proceed to a forecast in terms of quite specific numbers for 1959 and 1969, in order to give some quantitative significance to the trends we shall describe. This audience is well equipped to discriminate between exact and rough statistics, and we shall not belabor the point. What we are dealing with here are general orders of magnitude.

Our forecast of R and D expenditures is developed in the three tables following, showing expenditures on R and D (1) by major sources of funds, (2) by agencies performing the work, and (3) by

² Yale Brozen, "The Economic Future of Research and Development," *Industrial Laboratories*, Dec., 1953; "Scientific Advance as a Factor in Economic Change," Paper of the Seventh Conference on Scientific Manpower (Nat. Sci. Found., 1957); Univ. of Chicago project, "The Future of Industrial Research," to be published in 1960.

type of research project—basic research, applied research, or product development. Even if the forecasts embodied in these tables should by some mischance prove to be grossly misguided, the historical segment of the tables would still constitute a net addition (and we believe a net addition of substantial importance) to our knowledge of R and D expenditures. Indeed, it may be safely said that they constitute the best set of estimates of R and D expenditures running back to the year 1945 which is extant, because it is, as far as we know, the only set of such estimates. It is also a set of estimates which staff members of the National Science Foundation checked and could not improve upon. The estimates take into account data compiled by this Foundation, by the Defense Department, the Bureau of Labor Statistics, the Census Bureau, and our own Department of Economics.

In summary, as the figures in the tables indicate, we expect the total expenditure for R and D to increase from about 12 billion dollars in 1959 to about 22 billion in 1969. This forecast is in terms of current dollars, which we estimate—conservatively—will reflect an increase of about one-fourth in costs of research manpower and equipment. For the past decade these costs have tended to increase considerably faster than the general price level and presumably will continue to do so for the next decade. The corresponding 1969 figure in constant 1959 dollars would be about 17.5 billion.

The tables also indicate prospective shifts in the character of R and D spending. The prospect is that in 1969 a smaller share of the total will be devoted to government research (particularly defense-type) and larger shares relatively will be devoted to industrial research and to basic research generally than is the case now. Also, a decade hence the proportion of basic and applied research, as opposed to product development, promises to be increased. We would regard the reasons, now to be arrayed, as of much more abiding significance than our forecast of R and D expenditures.

Expenditures and Sources of Funds

In addition to the availability of money and the incentives to apply it to R and D, there are numerous other factors which could have a key bearing on the future course of expenditures for this range of activity. While it is our impression that it will not prove a seriously limiting factor, one of them is the availability of enough competent scientists and engineers to staff the R and D establishment adequately. Here, how-

³ In the McGraw-Hill survey taken in the spring of 1957, manufacturing companies were asked questions about future needs for scientists and engineers in research and development work. At that time they expected to employ 15 per cent more scientists and engineers in R and D over the three-year period, 1958-60. This need for scientific manpower was tied to a planned increase in R and D expenditures of 27 per cent. This means that for every

ever, we limit our analysis primarily to the prospective availability of funds and the incentives to increase the flow of funds to R and D. In so doing, we lead off with the establishment which now provides the larger part of the grand total of funds for R and D—the federal government.

At the present time, the federal government is the main provider of funds: 7 billion dollars in 1959, of which 6 billion is connected, in one way or another, with the defense program. (This includes expenditures by the Department of Defense and several other agencies, most notably the Atomic Energy Commission.) Most of the increase in R and D spending during the past two decades has resulted from the willingness or—if you like—the compulsion of Congress to appropriate funds for R and D connected with national defense.

It does not seem irresponsible to suggest that in 1959, and looking forward to the sixties, pressures of this sort have begun to slacken just a bit. Whatever one's personal view of Mr. Khrushchev and his ideas on coexistence, there seems to have been enough relaxation of international tensions to abate some of the enthusiasm for rapid increases in defense spending that accompanied the first sputnik. The federal budget for fiscal 1961 does not include, according to preliminary reports, any increase in defense spending. And there is some reason to believe that such increases as may occur thereafter will be of limited proportions. This is not only because of the changing climate of international relations, which may permit a slowing down in the arms race, but also-and perhaps more important—because the Department of Defense has developed, in recent years, an increasingly effective set of budgetary controls—so that any future step-up in defense requirements will be accompanied by a better selection of projects and a less wasteful expansion of expenditures than occurred in the fifties.

Considered in this context, what is likely to be the course of R and D expenditures in the defense sector? Even if spending on production of weapons is reduced or held relatively constant, spending for R and D is likely to go on increasing because whatever armaments we do produce will be more complex, in a scientific sense. Any reduction in key

⁹ per cent increase in R and D spending, a 5 per cent increase in scientific manpower is needed. On this basis we would need about 45 per cent more scientists and engineers in R and D in 1969 than we have today. R and D employment objectives obviously are high and will require a relatively high number of scientific and engineering graduates in the future. But if the total number of these graduates continues to increase, as we expect, it should not be difficult to supply R and D with scientific manpower. The flexibility of the supply of technical manpower is remarkable, even over short periods of time. A recent study for the National Science Foundation by the Bureau of Labor Statistics indicates that between January, 1954, and January, 1957—a period during which there were about 70,000 bachelors' degrees awarded in engineering—employment of engineers in industry alone rose by over 100,000. It seems clear that many persons without formal degrees can be trained to do routine technical work and that many engineers can be released either from such routine functions or from various nonengineering jobs to which they have drifted in slacker times. (Science and Engineering in American Industry, Nat. Sci. Found., 1957.)

armaments programs would probably mean a shift of some resources to semicivilian projects, such as those of the National Aeronautics and Space Agency, that have some longer range utility from a defense standpoint. In fact, a good theoretical case can be made that such a shift would accelerate R and D spending. Some of the detection and warning devices required to police an effective disarmament scheme would require more extensive R and D than the weapons they are supposed to detect.

However, as a practical matter, civilian administrators—in research or anything else—are always less wasteful than the military. And in fact, the very nature of military problems compels some duplicating programs that would not be undertaken in a more rational world. Consequently, we expect that defense-type R and D expenditures will increase at a slower rate during the next decade than they have in recent years.

A specific forecast can be no more than an intelligent guess, but our guess is an increase of 4 billion dollars from 1959 to 1969, or less than a half-billion per year. Considering the fact that in the past five years the total defense budget has only increased about 1 billion dollars per year (and the entire federal budget less than 3 billion per year), we might reasonably conclude that 400 million a year would not be regarded as a niggardly increase in R and D spending for defense projects. The amount would undoubtedly be raised during any renewal of near-hostilities, but as noted above, improved budgetary controls would limit the rise better than was the case after Korea.

Turning to other types of R and D financed by the government, we find that these include research in such fields as medicine, agriculture, and the support of educational institutions engaged in pure science. In fact, the bulk of them could be grouped either under "Agriculture" or under "Health, Education, and Welfare," to use the cabinet titles. In other words, these are expenditures that, at least indirectly, provide continuing benefit for certain groups of Congressional constituents—as opposed to expenditures by the Department of Defense, whose products go up in smoke (when they do go up) at Cape Canaveral.

The Congress seems to have a more consistently generous attitude toward such expenditures than it does toward the defense program. Nondefense research expenditures, financed by the federal government, have doubled in the past two years, and there is no reason why this trend should not continue. In fact, certain new developments may reinforce the trend: (1) "Research" has become a popular label for civilian expenditure programs. It no longer connotes long-haired professors doing useless experiments, but products of real value to business, agriculture, community health, and education. It is a label that helps to pass

appropriations. (2) The National Science Foundation has lately become an effective (almost cabinet-level) spokesman on the need for such expenditures and has collected data that give Congress a clear picture of the total R and D spending included in the federal budget. In view of the widely advertised competition with Soviet Russia, it seems likely that Congress will want to keep the total U.S. effort moving ahead at a fair clip, and any decline in defense-sponsored R and D will encourage increases in nondefense projects, which do not lack for sponsors.

In this sector, as in the defense sector, our forecast must be highly conjectural, because it depends on political considerations. But a

TABLE 1
RESEARCH AND DEVELOPMENT ESTIMATES
MAJOR SOURCES OF FUNDS
(In Billions of Dollars)

	Total	Industry	Government				Colleges	PERCI	E NTAG E OI	TOTAL
Year			Total	Industry	To Gov- ernment Labora- tories	To Colleges and Institutions	and	Industry	Govern- ment	College and Other Institu- tions
1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959	\$ 1.8 2.1 2.7 3.1 3.4 4.0 4.5 4.9 5.5 6.3 8.4 10.0 11.0	\$.9 1.0 1.3 1.4 1.5 1.8 2.0 2.2 2.4 2.5 2.9 3.5 4.0	\$.8 1.0 1.3 1.6 1.8 2.0 2.3 2.5 2.8 3.5 5.2 6.7 7.2	\$.3 .6 .8 .8 .9 1.0 1.1 1.2 1.4 1.8 3.7 4.1	\$.4 .5 .6 .7 .8 .9 1.0 1.1 1.2 1.4 1.6	\$.1 .2 .2 .2 .2 .2 .3 .3 .3 .5 .7 .9	\$.1 .1 .1 .1 .1 .2 .2 .3 .3 .3 .3	50% 48 48 45 44 45 44 45 44 40 37 35 36 37	44% 48 48 52 53 50 51 51 51 56 60 62 61 60	6% 4 3 3 3 5 5 4 5 4 3 3 3 3 3 3 3 3 3 3 3
1969	22.2	9.0	12.4	7.5	2.4	2.5	.8	40	56	4

doubling of the (much smaller) total of nondefense federal research spending in ten years seems like a conservative bet.

After considering government-financed R and D expenditures, we find that the remaining expenditures are financed almost entirely by private industry, which this year is spending 4.5 billion dollars, with only a very small part—300 million—financed by universities, research foundations, and other nonprofit institutions. Industrial research and development is a field we know considerably more about, as to motivations and prospects, than we do about the future of government R and D. Our knowledge is primarily the result of surveys conducted by the National Science Foundation, the McGraw-Hill Department of Economics and investigators at a number of universities. These studies

⁴ See Raymond H. Ewell, "The Role of Research in Economic Growth," Chem. and Eng. News, July 18, 1955, p. 2980.

give considerable depth to our knowledge of private R and D expenditures during the past ten years, and the latest McGraw-Hill survey reports industry's plans ahead to 1962.

On the basis of the trends so laid out, we can forecast, with some confidence, that private industry's expenditures will continue to increase rapidly, at least doubling by 1969 and perhaps increasing even more. The expenditures financed by nonprofit institutions will show an even more rapid rate of growth percentage-wise (although remaining small in absolute terms) because they are starting up from a relatively low level and the increasing public awareness of the need for scientific research has speeded up the flow of contributions (including business contributions) to these nonprofit institutions, so that spending can now rise sharply.

If we summarize the effects of these shifts in financing, we can see that they produce a shift in the purpose of research programs. We find that expenditures on defense-connected R and D will show less than average growth over the next decade. R and D aimed at making a profit, research simply to advance knowledge, and research to attain social and cultural objectives will grow relatively fast.

We translate our forecast of the availability of R and D funds into R and D performance in Table 2. Whereas government has been and will continue to be the biggest provider of R and D money, industry has been and will continue to be the main performer of R and D. It is noteworthy, however, that colleges and other institutions will increase their share of R and D performance over the next decade.

We also find a shift in the types of individual research products to be undertaken. At the present time (see Table 3), "research and development" is overwhelmingly "development"; i.e., the design and development of specific new products from the results of previous research. This kind of activity accounts for most of the military research and development program, and most of the private expenditures as well. Only 3.6 billion dollars out of the 12 billion spent on research and development in 1959 is for research in the laboratory sense—basic and applied research. And this is concentrated in a relatively few industries (aircraft, electronics, machinery, and electrical equipment) and, so far as basic research is concerned, in government and university laboratories.

By 1969, we may expect a rather substantial shift. Product development will still be the predominant type of project, but basic and applied research will increase to 41 per cent of the average research dollar, compared with 30 per cent in 1959. The shift will result mainly from less emphasis on defense work (more on basic science) in the government sector and partly from a trend toward complex R and D (as opposed to mere gadgetry) in industry.

TABLE 2
RESEARCH AND DEVELOPMENT ESTIMATES—AGENCIES PERFORMING THE WORK

		In Billion	s of Doll	Percentages of Total			
Year	Total	Industry	Govern- ment	Colleges and Insti- tutions	Industry	Govern- ment	Colleges and Insti- tutions
1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957	4.5 4.9 5.5 6.3 8.4 10.0	\$ 1.2 1.4 1.9 2.2 2.2 2.4 2.8 3.1 3.4 3.8 4.3 6.0	\$.4 .5 .6 .6 .7 .8 .9 1.0 1.1 1.2 1.4	\$.2 .3 .3 .3 .3 .4 .5 .5 .6 .8 1.0	67% 67 70 71 71 71 70 69 69 68 71 72 74	22% 19 19 19 20 20 20 21 20 19 17 16	11% 14 11 10 10 9 10 11 11 13 12 12
1958 1959	$\frac{11.0}{12.0}$	8.1 9.1	1.6 1.6	1.3 1.3	76	13	11
1969	22.2	16.5	2.4	3.3	74	11	15

The Purpose of Research in Industry

We now turn to a discussion of the factors that have a special importance in the continuing rapid growth of private industry's expenditures on research and development. Clearly this has been a growing activity—we might almost say a "growth industry"—over the past decade. Private expenditures on R and D have increased from 1.4 billion dollars in 1949 to 4.5 billion in 1959, or by 220 per cent in ten years. What has caused this tripling of expenditures?

Some of the original impetus undoubtedly came from wartime efforts in research and development, which demonstrated the feasibility of organizing for this work on a large scale and scheduling whole projects from applied research through the development of finished products whereas in peacetime, most business firms had not made much connection between original research and product marketing. Moreover, the wartime R and D created a considerable backlog of knowledge that could be applied to the development of peacetime products. Some companies with long-established research programs—particularly in the chemical and electrical industries—had a further backlog of prewar applied research that they found profitable to develop in the expanding postwar markets. All of these factors helped to swell R and D spending during 1947-53, but this early postwar boom was concentrated in the few industries that had extensive prewar or wartime research experience-chemicals, electrical, aircraft, electronics, and a few sections of the machinery industry.

TABLE 3
RESEABLY AND DEVELOPMENT HETMATES—TYPES OF RESEARCH PROTECTS

	UTIONS	Develop- ment	1000	9
			222222222222222222222222222222222222222	.33
	INSTIT	Applied	33333333333333333333333333333333333333	40
	Colleges and Other Institutions		8222222222222	1.32
		Basic	08 2 8 8 4 7 4 5 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5	20
			0.7444448222284688	1.65
		ta]	<u> </u>	
	-	Total	ι <i>σ</i>	3.3
		Develop- ment	22222222222222 %	55
IS		å"	\$25.55.55.55.55.55.55.55.55.55.55.55.55.5	1.20
OJEC	ENT .	Applied	28888888888888888888888888888888888888	35
H F	GOVERNMENT		81222222222222222222222222222222222222	.84
EARC	Go	.2	$\mathcal{C}_{\mathcal{C}}$	15
KES		Basic	28.48.88.99.99.99.99.99.99.99.99.99.99.99.99	.36
ES OF		Total	4400000000000000	2.4
-1 xP llars		Develop-	\$ 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20
of Do			7.55222332 7.55223332 7.5523332 7.3552333 7.3552333	
F ESTIMATES—1 YPE Billions of Dollars)		Applied	1	0 11.55
T ES	TRY		20.00 20.00	25.0
DEVELOPMENT ESTIMATES IYPES OF KESEARCH FROJECTS (In Billions of Dollars)	Industry		2.2.8.8.4.4.8.6.2.6.4.8.1.4.2.1.2.1	4.12
VELO		Total Basic	44444444466666666666666666666666666666	5
			\$0.000,000,000,000,000,000,000,000,000,0	.83
KESEARCH AND			240224824849789	16.5
EARC			\$ 66% \$ 60	26
XES	Total	Develop- ment	84 5 8 8 8 8 9 9 9 8 8 8 8 8 9 9 9 8 8 8 8	
			444666666666666666666666666666666666666	13.0
		Applied	\$232325555555 \$2323555555555555555555555	28
			8. 74. 7. 74. 1. 108 1.	6.28
		Basic	011000000000000000000000000000000000000	13
			844282808244446758829	2.84
		Total	1222222444468861121 81171140898884000	22.2
		Ä		
	YEAR			
			1945. 11946. 11947. 11948. 11949. 11949. 11947. 11957. 11959.	1969
	11		• क्या क्या क्या क्या क्या क्या क्या क्या	1

The annual returns on investment, for R and D performed in these industries, were extremely high—in some cases amounting to several dollars for each research dollar invested. For example, in 1951 one large oil company reported a total return of \$15.40 for each research dollar invested, and a large paper company, a return of \$10.00 per year on each research dollar.⁵

As these facts began to attract attention, firms in other industries began to make larger R and D investments. Since 1954, the increase outside the traditional "research-based" industries has been particularly rapid. Financial incentives were increased by a 1954 revision in the tax law, which permitted R and D expenditures to be deducted as a current expense instead of treated as a capital investment for tax purposes. But the most important factor was probably the return of vigorous competition to postwar markets after the end of the Korean hostilities. In the past five years, more and more companies have turned to R and D as a competitive weapon, enabling them to offer new or improved products and to reduce the costs of manufacturing by new processes that save labor or materials.

A McGraw-Hill survey in 1958 reported fairly complete data on why companies were increasing their R and D programs. In answer to the question: "What will be the main purpose of your research program?" 41 per cent of the responding manufacturing firms specified "improvement in present products." Another 48 per cent specified "new products" and 11 per cent specified "new processes." These answers emphasize the very great preponderance of development in total research and development outlays. Improvements to existing products clearly do not require much fundamental—or even much applied—research, and a large proportion of the outlays on new products occurs in industries, such as food or automobiles, where the proportion of research on such products is small relative to development. Because of the large backlog of applied research information that has been available (primarily from the efforts of a relatively few large companies), the majority of firms have been able to concentrate on the highly profitable business of product and process development.

These programs to develop new or improved products generally yield quick returns, as indicated by manufacturing companies' replies to another question in the same survey: "How soon do you expect your expenditures on research and development to pay off?" Fully 39 per cent of the respondents expected a pay-off in less than three years (which corresponds closely with the 41 per cent concentrating on the improvement of present products—the quickest pay-off type of project).

⁵ Allan Abrams, "Measuring the Return from Research," *Proceedings* of the Fourth Annual Conf. on the Admin. of Res. (Univ. of Michigan, 1951).

Another 52 per cent expected a pay-off in three to five years (corresponding roughly to the 59 per cent developing new products or processes—but obviously omitting some of those projects that required really difficult research and development). Only 9 per cent put the pay-off period at six years or more, which may be taken as a rough indication of the proportion of firms (even large firms which constituted much of the sample) engaged in really fundamental research.

These rates of return on research were (and continue to be) significantly better than the typical return, or pay-off, on investment in new plant and equipment. In 1955 (when expectations as to rate of return were undoubtedly higher for plant and equipment than in 1958), the McGraw-Hill survey found that 17 per cent of manufacturing firms expected new equipment to pay off in three years or less (compared with 39 per cent for investment in research); 64 per cent had a three-to five-year pay-off period (compared with 52 per cent); and 19 per cent figured six years or more (compared with 9 per cent). These comparisons make it clear why many companies with a given amount of capital to reinvest found it profitable to increase the proportion going to research and development. The generally rising level of corporate cash flow, the deductibility of research expenditures for tax purposes, and the availability of a relatively large fund of scientific knowledge that had not been exploited commercially were all contributing factors.

In addition, the research boom—once it got started—tended to feed on itself. Because of the competitive factor, each increase in research outlays bred more increases. The development of new engines in the automobile and aircraft industries required the development of new fuels by the oil companies who wanted the new business. Substitution of aluminum for steel, plastics for wood, synthetic fibers for older textiles—all have led to more research in the industries affected, either to fight off the substitutes by improving product quality, or to develop new uses for the old products. This interproduct and interindustry competition is still going on furiously and promises to be a continuing spur to R and D. Rates of return are still high enough to stimulate ventures into new products and processes. And where these projects succeed, they are bound to provoke additional research and development programs as a counteraction by firms seeking to maintain their respective shares of the market.

This brings us up to 1959, with the forces behind the research boom still strong. But are they strong enough to bring about another tripling of research expenditures in the decade ahead? In our judgment they are not. Industrial research is still a growth industry, but as in other such cases, the rate of growth is likely to slow down somewhat as this industry matures. During the last ten years—with the stimulus of high

returns—industrial research has at least halfway grown up to its near-term potential. There is still a fairly large amount of fundamental scientific knowledge that has not been exploited commercially, but this backlog has been reduced considerably since the end of World War II. Much of the older applied research has been carried through to product development, and much of our store of basic science is being utilized, by one firm or another, in current applied research projects. This is especially so in the industries—like chemicals and electrical equipment—where the science base was established before World War II. Other industries are further behind in exploiting their science base, or in doing the basic research needed to create such a base. But it is hard to think of an industry today where at least a start has not been made on exploiting the immediate research potential.

From now on increases in the expenditures for product development will require more proportionate increases in applied research than was the case some years ago. And inevitably, the growth of applied research will require—sooner or later—an expansion of our base in fundamental science. All this can be done. Industry is already shifting more toward a heavier proportion of applied and basic research, and we have included these shifts in our forecast for 1969, as previously given. However, such shifts are bound to slow down the over-all growth of R and D expenditures for two reasons: as noted above, the more laborious types of research do not pay off as quickly and funds for such projects will be harder to get; basic and applied research require highly trained scientists and engineers—not merely technicians—and the supply of such people is relatively limited. It is increasing, to be sure—as we noted previously—and research and development expenditures will continue to increase, but not as fast as when there was a large backlog of research to be quickly converted into new products by engineering talent.

Finally, there is the matter of profitability. The average rate of return on research and development has been well above the return on investment in plant and equipment during the past decade. It seems likely to remain higher for at least the next five years, but as competition in research and in new products increases, the differential is bound to narrow. By 1965, new equipment may be almost as good a bet in many cases. Furthermore, the whole economy will be changing by 1965 because we shall be entering a period of very rapid growth in the number of new families and rapid growth in most consumer markets—a period, therefore, that is likely to offer increasingly good returns on the expansion of plant capacity. In this new atmosphere, the incentives to increase R and D programs will still be strong for most companies, because labor and materials will still be costly and research points out

ways to save them. All we have done in the preceding discussion is to indicate why we think it is reasonable to figure that R and D spending by industry will about double in the next decade instead of tripling as in the past decade.

Implications for Policy

If research expenditures are estimated to double in the next ten years, there would appear to be little need for public concern about the quantity of research we get. In absolute terms, it will be enormous—perhaps as great as can be absorbed by our facilities for introducing new production processes and marketing new products. In our Department of Economics, we have estimated that as much as 20 per cent of all the products to be marketed in 1969 will be items that are not on the market today. This is perhaps as high a proportion as it would be practical to attempt, considering the concentration of effort that is required to introduce and market new products successfully. There are similar limits to the number of new things that can be tried out on production lines, although in the long run the economy would be well served by innovations that permit mass production with a smaller capital investment. Research in this direction may increase faster than new product research as we get into the mid-sixties.

In any event incentives for applied research and product development are very strong, and likely to remain so without further changes in public policy. We will get a large enough quantity of new products and processes. There may, however, be reason to worry about the quality of our research effort, in the sense that there are insufficient incentives for basic research. Our own surveys indicate that most industrial companies do not do that kind of research because it takes too long to pay off. Other studies have indicated that too much of the government's research effort (and too many of its grants to universities) is concentrated on applied research and too little on basic research, if the latter is to receive the impetus it needs from government sources.

It is possible that industry could be persuaded to undertake more basic research by specific tax incentives—say a doubling of the normal deduction. It might also be persuaded (although this seems less effective) by a simple reduction in corporate tax rates—which would shorten pay-out periods on all types of investment. Some companies engaged in defense work say that they would do more basic research if they were allowed a bigger profit on defense contracts. And presumably straight subsidies could be employed to encourage companies with large applied research programs to do more basic work.

⁶ Robert P. Ulin, "What Will Research Bring About?" Thinking Ahead, *Harvard Bus. Rev.*, Jan.-Feb., 1958.

However, it seems to us that there are serious limitations on any incentive scheme designed to get more basic research done in industry. The trouble is that most industrial companies cannot use the results of such research. By definition, basic research does not have a specific product or market objective; there is no telling what it will turn up. Very few companies have such broad production or marketing facilities that they can use whatever is discovered, and very few have the capital to wait out the long periods of basic research plus applied research before they get to product development. The burden falls back on a few large companies (most of them defense contractors), the universities, and the government.

This is true in spite of the fact that, in companies which actually do basic research, the association with basic scientists seems to improve the work of the applied research staff and lead to a higher percentage of success in applied research projects. Some research directors believe, therefore, that up to 10 per cent or even 15 per cent of a total R and D budget can profitably be allocated to basic research, simply on the basis of the resulting improvement in work of the entire staff. This educational and training value may lead to somewhat more basic research in industry during the next decade, but we must assume that the number of companies involved will continue to be relatively limited.

Therefore, an indiscriminate program to encourage basic research would probably not succeed. It would seem more practical to concentrate any incentive or subsidy program on the limited group of companies described above, on the efforts of some government agencies—and particularly on the universities, which have the ideal climate for basic research. When we look at the important discoveries in basic science that have come from our universities and then look at the small size of the expenditures in their sector, it is difficult to avoid the conclusion that the nation would derive enormous long-run benefits from an increase—proportionately a very large increase—in this area of research. In our forecast of R and D spending for 1969, we have assumed that appropriate steps would be taken in this direction, but we would be delighted to find, ten years hence, that we underestimated the American people's willingness to support the pursuit of fundamental knowledge.

⁷ Richard R. Nelson, "The Simple Economics of Basic Scientific Research," J.P.E., June, 1959.

⁶Based on preliminary results of a Univ. of Chicago study directed by Prof. Yale Brozen.

DISCUSSION

ROGER A. FREEMAN: Professor Becker's study is an important pioneering advance into a largely unexplored area in which for too long semidarkness has prevailed and mythology has flourished. The paper summarizes the findings of a forthcoming report which, I hope, will command attention although it is apt to raise havoc with certain widely held and highly cherished beliefs.

Professor Solomon Fabricant pointed in the 1958 report of the National Bureau of Economic Research at an amazing gap in our knowledge of an important segment of our economy: "Public and private expenditures on education run to many billions of dollars each year. Yet little has been done in any systematic and comprehensive way to view the educational process as in some degree a form of investment, parallel to and complementing investment in tangible capital goods and in scientific research and development."

Outlays for education were raised from 4 billion dollars or 2 per cent of GNP at the end of World War II to about 24 billion or almost 5 per cent of GNP in the current year. This was accomplished more on faith and a general recognition of educational needs than on research evidence. Becker expresses the widespread belief that serious deficiencies exist at all levels of American education, that we must continue to increase our educational investment, and that we shall have to use educational resources more effectively than we are doing now. Becker's paper covers one phase of NBER's research project in the economics of education: the return to the individual on his and the society's investment in college education. A comparison of the returns from education with other investment opportunities yielded no evidence of underinvestment in college education. That may not necessarily prove that we are not underinvesting; it could mean that evidence to prove it is harder to come by. These findings run counter to what many of us want to believe, and they are likely to be received with less than enthusiasm in some sectors. Becker feels, and I believe rightly so, that the returns would be higher if the quality of college students which probably means the level of their natural and acquired skills and knowledge—were materially raised.

Becker's contribution can be better appreciated in the light of earlier work in this field. In terms of the lasting attention it attracted, Paul Glick's paper, "Educational Attainment and Occupational Advancement," presented at the International Sociological Congress in 1953, ranks first. The 1950 Census had shown that males twenty-five years and over with four or more years of college had a median income of \$1,222 p.a. more than those who had completed only four years of high school. Glick computed the arithmetic mean for males between the ages of twenty-two and seventy-four and arrived at an income differential of \$2,208 in favor of the college man. He placed the high school graduate's lifetime earnings at \$165,000, the college graduate's at \$268,000, assuming that both worked forty-seven years between the ages of twenty-two and seventy-four. Thus the college man would earn \$103,000 more in return for the relatively small investment of the cost of four or more years at college.

Glick stated specifically that his "findings form the basis for making an appraisal of expected consequences, in terms of occupational status and income, on continuing education beyond a specified level." In plain words, a man can add \$103,000 to his lifetime income by attending college for four years instead of quitting after high school.

Glick's conclusion was challenged, among others, in the report of the Education Committee of the President's Commission on Intergovernmental Relations, whose research I directed, because it attributed results to extended schooling which are, at least partly, caused by differences in intelligence, ambition, and family background. However, Glick's findings proved to have popular appeal and have been widely quoted ever since. Only a short time ago, the National Education Association suggested in advertisements of American Education Week that a student could increase his lifetime earnings by \$103,000 by going to college. Actually the difference is only about half as much, and much or most of it cannot be added to their earnings by the great mass of those who now terminate their formal education at the high school level. Becker indicates that he made adjustments for ability and other factors, although it is not apparent from his paper how this was done.

In drawing practical conclusions from the Becker study, we should remember that we are dealing not with static but dynamic conditions with long-range effects. Those who enter college in 1960 will have to base their expectations on earnings between the years 1965 and 2010. Thus we must ask: What are the trends in the differential between college and noncollege earnings?

No comprehensive data on the education-income relationship are available earlier than from the 1950 Census nor later than from a 1956 sample survey. But a comparison of professional and manual wage trends gives a clear picture. Senator (then Professor) Paul Douglas showed in his Real Wages in the United States 1890-1926, thirty years ago, that the earnings of white-collar workers (except public school teachers) were increasing less than those of manual workers. Professor Seymour Harris in his How Shall We Pay for Education? (1948) also demonstrated that professional earnings were declining relative to manual wages. He ascribed this trend to the fast rising supply of college graduates, and warned that we "may be turning out too many graduates" and be facing a danger of a further deterioration in professional earnings, and that "we are on our way then to establishing an A.B. and a Ph.D. proletariat."

Last November, I attended an Arden House Conference of the National Manpower Council at which Professor Harris presented a major paper in which he again suggested that we are creating an excess supply of college-trained persons, that it will not be easy to find openings in management and the professions for an average of a half million college graduates a year over the next ten years, and that the pressure of numbers will have an unfavorable effect on incomes.

The facts are these. Between 1939 and 1957 (the earliest and the latest years for which these data are available) the earnings of male professional and technical workers drifted down compared with their 1939 position: in relation to craftsmen and foremen to 85 per cent, in relation to operatives to 78 per

cent, and in relation to common labor to 75 per cent. Over the same period the number of professional workers increased 81 per cent, of craftsmen 70 per cent, of operatives 48 per cent, of laborers 6 per cent. In other words, increase in numbers and progress in earnings were inversely related. You may remember that Blank and Stigler in *The Demand and Supply of Scientific Personnel* (NBER, 1957) reported that a relative decline in income had accompanied numerical growth of scientific and technical personnel—to the dismay of some of the individuals who had originally suggested their study. At a symposium of the American Academy of Political and Social Science in September, 1959, disappointment was expressed at Blank's and Stigler's findings because they failed to confirm certain concepts which some of the sponsors of their study had deemed axiomatic and were unwilling to renounce.

Past trends may well continue. Between 1940 and 1960 the population of the United States increased 36 per cent, the number of degrees granted 130 per cent, and the earnings of professional workers, when related to those of manual workers, declined about 20 per cent. Between 1960 and 1970 the population of the United States will grow 17-18 per cent, the number of degrees (according to Office of Education projections) 75 per cent.

What does this bode for the relative income status of college graduates? Those who excel in ability and effort are likely to maintain a comfortable differential over noncollege men. For many others the prospective financial returns may or may not justify the investment.

So far I have been talking only about men graduates. Becker prepared no estimates for women graduates because most of them do not spend a major part of their adult life in gainful professional activity. With understandable unobtrusiveness, Becker hid his most significant pertinent comment in a footnote; namely, that women may well reap a higher return from college attendance than men. The campus is by far the best hunting ground for eligible and potentially well-to-do males. The perquisites of college attendance may well outdistance such alternative investments for females as a Miami Beach vacation, a Caribbean cruise, or a mink coat.

In summary then: Professor Becker has made a valuable contribution and his full report may be awaited with great expectations. But he has barely started to answer the crucial question in this field: How much should we invest in higher education and how? Some authors have proposed vast increases. Others agree with Beardsley Ruml who suggested in his *Memo to a College Trustee* (McGraw-Hill, 1959) "that new money is not needed in anything like the amounts presently estimated. Many of the necessary funds are already at the disposal of the college, but are being dissipated through wastes in the curriculum and in methods of instruction." Ruml's conclusions parallel those I drew from a study of the elementary-secondary school system in 1958. It seems that all types of education offer a fertile ground for comparative productivity and input-output studies. Some of the vital questions are: What is the relationship between the level of investment (e.g., per student) and the prospective return? Is it possible, by a comparative study, to find an optimum (or optimum range) of size of investment and method of resource use (money, man-

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power, facilities) which produces the greatest results per unit? Economists have in the past not been overly ambitious to apply their talents and tools to the field of education. It is to be hoped that Professor Becker's study will be followed by many in this area.

Burton H. Klein: Rather than say a few words about each of the papers presented at this session, I have chosen to concentrate my remarks on the paper prepared by Keezer, Greenwald, and Ulin. Before closing, however, I want to say a few things about the other papers.

Despite their importance to our national security and to the growth of our civilian economy, research and development have received relatively little attention by economists. We badly need both more empirical information and a deeper understanding of what this business of advancing technology is all about. We should be grateful to the authors of this paper for some very useful information on the trend and distribution of research and development expenditures. Though it may appear that I am going out of my way to be critical, nothing I say is intended to minimize their accomplishment.

Let me start first with the historical estimates they have prepared. Here, I wish that the authors had said something about their sources and their methodology. Perhaps if I knew more about how the estimates were prepared, my doubts would be dispelled. But for the moment, anyway, I suspect that the historical estimates may considerably overstate the actual increase in research and development expenditures since the end of World War II. In the case of military research and development, which accounts for a very significant proportion of the total, I do know that during this period R and D has been redefined to include some major items formerly included in production. For example, where it used to be the practice to include only the first several prototype airplanes in R and D expenditures, it is now the practice to include substantially all the many test vehicles needed before an airplane is ready to go into service. Whether or not such changes in definition were taken into account in preparing the estimates I do not know; if they were not, the increase shown for military R and D expenditures is certainly exaggerated.

I also wonder whether part of the rise shown for privately-financed industrial R and D is not fictitious. The change in the tax laws carrying more liberal provisions for R and D may have caused firms to define R and D somewhat more liberally than in the past. The fact that in appraising a company's future earning prospects investors have come to pay much attention to what a company is doing in R and D may also have had the same effect.

This is certainly not to deny that a large increase has taken place in public and private R and D expenditures during the past ten or fifteen-years. My question is simply whether the actual rise has been as great as these estimates show.

Turning now to the projections, here also I would like to raise some questions, particularly with regard to military research and development expenditures. The projections for military R and D point to an increase of some 400 million dollars a year. If present policies remain in effect for the next decade,

I have no doubt that such a rate of increase is pretty much an upper limit. On the other hand, even if a disarmament movement gets underway, the government may decide that above everything else we must maintain a very strong technological position, and such a policy in turn may call for quite sharply increasing expenditures. Moreover, as the authors point out, a disarmament movement may itself give rise to some specialized R and D in the field of detection and warning. Actually, the initiation of an arms control scheme may induce larger expenditures, not only for R and D, but for other purposes as well.

One of the particular reasons the authors give for a slower rate of increase in military R and D is the belief that civilian administrators will play a more important role in the future, and that they will be much more successful than their predecessors in eliminating duplication. Though the elimination of parallel programs is often regarded as the way to economize in R and D, the evidence I have examined strongly suggests that one of the main reasons why military R and D costs have gone up so much is precisely because there has not been enough competition in the early phases of R and D—in developing a broad menu of technology. Actually, I think that it is very likely that if an energetic drive to eliminate all types of duplication in R and D is undertaken, expenditures will go up at an even more impressive rate than the authors have projected—either that, or we shall be much disappointed in the amount of progress made. Under such a policy we would have to spend enormous amounts just to always be in the position of catching up with the Russians. Fortunately, I see no indication that civilian administrators are going to behave in the manner that the authors allege.

One factor that may moderate future increases in military R and D is a likely shift to basic and applied research. A continued increasing rate of expenditure on expensive weapon system projects presupposes a continued flow of good ideas. But it is becoming increasingly apparent that our main shortage is in just such ideas. For example, the problem of defending ourselves against ballistic missiles is not one of making a difficult choice from among a half-dozen promising alternatives; the problem is one of finding a few seemingly good ideas to explore. And so it is in other fields of military research and development. Though I do not know, of course, what will be done, I hope that there will be a good deal more emphasis than there is now, not only on basic research, but also on those other types of R and D that generate new ideas. One matter that certainly deserves a good deal of attention by economists is the kinds of institutional arrangements and incentives required to facilitate such a shift. In this country we do not have very good arrangements for stimulating major accomplishments in new technology.

But to return to the main topic, what do I think will happen to military R and D expenditures over the next ten years? To tell you the truth, when it comes to predicting public policy, I am far less confident than I would be if I had to predict the outcomes of future world-series games or of presidential elections. If I had to come up with a single best guess, perhaps it would not be very different from the authors', though I would rationalize my position

somewhat differently. But I certainly would not bet a lot on either the number or the rationalization.

Lastly, let me say a few words about the projection of industrial R and D. A very rapid increase is projected—a doubling in the next decade—and it is also believed that there will be a decided shift in the composition in favor of the more basic types of research and development. Somehow I find it difficult to believe that both of these things will come about. If industry is really willing to increase its R and D expenditures this rapidly, I should guess that the increase would be concentrated on projects promising a quick pay-off. On the other hand, if industry does decide to go in for research in solid-state physics and other such fields in a big way—and I doubt that it will—I do not believe that such a large increase in the total volume of industrial R and D will result.

Now I want to turn for a few moments to the papers presented by Mr. Siegel and Mr. Becker. One of Mr. Siegel's main points is to warn us not to exaggerate the effect that technology may have on our future economic growth. I have no doubt that, like almost anything else, the effects of a rapidly expanding technology can be exaggerated. But I do not think there is any great danger that economists are suddenly going to become extremists in this regard. What economists have been mainly guilty of, it seems to me, is ignoring altogether the possibility that society has some control over the resources that are used for advancing technology and hence pave the way for future economic growth. The entire matter is usually dismissed by projecting a growth in productivity, say, of $2\frac{1}{2}$ per cent or 3 per cent a year coming about more or less automatically, quite irrespective of what is done or not done to promote rapid advances in technology. I think that it is high time that economists began to take an entirely different attitude towards this matter.

What Mr. Becker's analysis shows, essentially, is that there is no greater financial return from a college education than from other kinds of investments. He goes on from there—after explicitly stating that he has not dealt with the problem of external benefits—to suggest that, contrary to general belief, perhaps there is no great underinvestment in education. I simply want to point out that the same kind of analysis can lead to a very different kind of conclusion; namely, that college graduates are seriously underpaid. It is true that in some occupations—notably medicine—educational institutions have done a good deal to assure that their graduates will be able to collect the financial rewards due them. But, generally speaking, educational institutions have been very inept in such matters (as Mr. Becker's figures plainly indicate). Perhaps at some future meeting of the economic associations we ought to have a special session devoted to the topic: What are the possibilities for getting economists as well organized as doctors?

HENRY H. VILLARD: I intend to concentrate on Professor Becker's paper. As I see it, he is mistaken in arguing that the "private" or "direct" effect of a college education "largely corresponds" to "the effect on the incomes of persons receiving education." It is essential to distinguish between the direct effect and the direct monetary effect of a college education. Professor Becker provides

evidence on the latter only. But the direct effect exceeds the direct monetary effect to the extent that a graduate is a better consumer, is a better citizen, or is engaged in a more congenial occupation. One can add to a graduate's money income the income in kind he receives as a better consumer or a better citizen. Alternatively, one can deduct from the total cost of education that portion attributable to improvements in citizenship and ability to consume. However the adjustment is made, it is obvious that the direct return will be larger than the direct monetary return on both these counts.

The point regarding a congenial occupation is probably even more important quantitatively. It is quite possible that college graduates engaged in college teaching earn on the average over their lifetime no more than those who never go to college. As I am sure even Professor Becker would agree, it does not follow that college students should be taught by those who have never been to college! What does follow is that college teachers receive an obvious direct benefit from their college education in that it permits them to engage in an occupation which they prefer. We know little about differences in preferences and abilities; hence it is not easy to measure the amount of the benefit involved. Suppose, as a first approximation, we assume that college graduates engaged in college teaching are of average ability and take the difference between their earnings and those of all college graduates as a measure of their preference for college teaching; on this basis it is obvious that the benefit they receive is substantial. But this may underestimate what is involved. For all college graduates may have similar preferences for congenial occupations and receive part of the benefits of their college education in this form. To the extent that this occurs, the problem of measuring the benefit—and of determining the "ideal" distribution of the labor force—becomes extraordinarily complex. The obstinate refusal of people to act like economic men intent only on maximizing their money income is always a source of frustration for theorists!

To summarize thus far: The direct effect of a college education much exceeds its direct monetary effect. Until we know the amount of the excess, we will not know whether we are or are not underinvesting in education even if education were to offer no indirect returns whatsoever.

Actually I am most concerned with Professor Becker's treatment of indirect returns, which he "largely" equates with the effects of college education on the incomes of "others." As I see it, the most important return from college education, viewed broadly, is additions to knowledge in contrast to transmission of existing knowledge. Note that all that has been said so far would apply if knowledge were completely static (e.g., medicine in the Middle Ages). Additions to knowledge are something that society has only just begun to realize that it can buy directly. In the past they have mainly been a by-product of the transmission of existing knowledge; only the innate and quite uneconomic intellectual curiosity of scholars has led to additions to knowledge, as new discoveries obviously tend to reduce the economic value of existing knowledge.

As with direct effects, Professor Becker deals only with the indirect monetary effects of additions to knowledge. Now an addition to knowledge may involve a look-see at the back side of the moon without adding a penny to anyone's

income or it may permit us to change the shape of auto tail fins annually instead of biennially with the same economic input. There is no reason whatsoever to believe that the latter, which will have an effect on incomes, is of any greater over-all benefit than the former, which will not. Additions to knowledge may be in themselves quite as valuable as additions to income; it depends on what we want out of life. It really is rather charming to see academic economists, who gave up the additional incomes they could earn in business for the pleasures of adding to knowledge, arguing that additional knowledge is only valuable as it adds to income! Again a look-see at the back side of the moon can (so far as I can see) only be achieved by the government while changes in fins can be provided by private enterprise. Suppose consumers prefer a look-see. Then there would be a clear misallocation of resources if we allow an inordinate and quite irrational passion for consumer preferences expressed through the market mechanism to deny consumers their preference for a look-see!

But suppose we confine ourselves to the monetary value of indirect effects. As this is a comment rather than a paper, I can do no more than state my belief: that additions to knowledge are economically important; that there is no reason why they should be achieved at the socially optimum rate under free enterprise; that in fact we have been underinvesting in additions to knowledge; and that education in the broadest sense needs encouragement if the socially optimum rate of additions to knowledge is to be achieved.

Conceivably we spend too much on additions to knowledge. In my judgment we spend altogether too little. The right amount depends, obviously, on what we want to achieve. I admit I am not concerned with income differences among groups in the United States. What I want to achieve—and I see no reason as an economist for setting my sights any lower—is reasonable material well-being for the human race. For reasons I shall not elaborate I am convinced that significant world-wide economic development involves replacing steel and fossil fuels with aluminum and solar or atomic energy. This is, obviously, perfectly possible; but it is, to me at least, equally obvious that it will require us to know far more about our world than we now do.

Professor Becker may object that additions to knowledge have more to do with research than with college education. Actually I consider them inseparable, and am in complete agreement with Dr. Keezer that colleges are best equipped to undertake the additional basic research which we both believe is necessary. As I see it, thus far education has been forced to devote most of its energies to transmitting existing knowledge to the next generation. What is needed is to make the whole process "go critical" by an expansion of education sufficient to provide us with a large surplus of trained scholars who can devote themselves exclusively to adding to knowledge by systematic research. Put in economic terminology, this means that, in my judgment, additional spending on education and research is likely to lead to rapidly increasing external returns.

Nor can I accept Professor Becker's argument that only physical scientists are likely to add to knowledge or that to achieve additional knowledge only a few "great men" need be trained. It seems clear to me that additional knowledge

edge in a great many areas is needed. Admittedly in retrospect only a few great men may turn out to have had insight, but how does one recognize an Einstein at eighteen? Further, in research as elsewhere, we need hewers of wood and drawers of water. Unless we educate broadly, where are we going to find the people to serve as deans and college presidents—to say nothing of such menial tasks as chairing departments and writing textbooks!

Comparisons with the Soviet Union are tricky; many of you may resent them. But if you were to ask me for a single explanation of why it is that Russia has come so far so fast—and why I fear they may continue to do so in the future—I would offer the fact that the percentage of nonagricultural employment in the USSR devoted to education is two and a half times as high and the percentage devoted to trade half as high as in the United States.

As you may have found my remarks thus far a mite critical, let me end on a note of agreement. I certainly concur with Professor Becker that the present situation does not call for a proportionate expansion of all types of education. Rather it seems to me that we are going to have to decide consciously on the areas where we want additional knowledge. But if I want to end on a note of agreement, I think I had better not say anything more. For I very much doubt if even Milton Friedman can think up a way to use the market mechanism to achieve the socially desirable allocation of research effort!

FACILITATING MOVEMENTS OF LABOR OUT OF AGRICULTURE

MIGRATION FROM AGRICULTURE: THE HISTORICAL RECORD AND ITS MEANING

By Dale E. Hathaway Michigan State University

The low returns to human effort throughout most of United States agriculture and the very low incomes of most persons in some regions of U.S. agriculture have long been recognized. The most common prescription offered by economists for these ills has been a large-scale transfer of labor from agriculture. It usually is argued that such a transfer would: result in a recombination of resources in agriculture that would provide a solution to the major problems of United States agriculture; increase incomes in agriculture relative to incomes in the nonfarm economy; and reduce the disparity in agricultural income between regions.

For the last four decades there has been a large out-migration from agriculture to the nonfarm economy. This is sometimes cited as having significantly contributed to the improvement of agriculture's ills, and more of the same is prescribed as the method of complete cure. Therefore, it seems pertinent to examine in some detail the impact of the recent out-migration from agriculture to help us judge whether this simple prescription is enough or whether we must, perhaps, treat some serious secondary symptoms at the same time.

The Size of the Out-migration

Because it has become so commonplace in our society we sometimes fail to grasp the magnitude of the migration from agriculture. Yet, for a nation lacking a positive policy to induce migration and which has fortunately largely avoided widespread natural or man-made disaster, the record is truly amazing. Since 1920 more than 25 million people have migrated from farms to urban areas and nonfarm occupations. Migration from farms has persisted through depressions and wars. Although the farm population in 1950 was only about two-thirds that of 1920, the absolute number of migrants during the past decade has been above earlier periods.

However, economic conditions have had a strong influence on the rate of out-migration from agriculture. In the 1920-30 decade more than 6 million people left agriculture—a rate of 19 per cent of the begin-

ning population.¹ During the thirties only slightly over 3.5 million migrated, a rate of about 13 per cent. In the ten years from 1940 to 1950 the net migration exceeded 9 million persons, giving a rate of 31 per cent. It appears that the number of out-migrants during the 1950-60 decade has been about the same as in the forties, so that the rate probably has exceeded one-third.

All regions of the country have experienced an out-migration from agriculture. However, the rates have varied between regions in different ways at different times (Table 1). The variation between regions in rate of out-migration was relatively low during the twenties. During the thirties, however, there was a wide variation between regions, with

TABLE 1
Net Change in Rural-Farm Population by Migration, United States and Regions, 1920–30, 1930–40, 1940–50

Area	Rate of Change in Farm Population Due to Migration				
	1920-30	1930-40	1940–50		
United States	-19.3	-12.7	-30.9		
New England Middle Atlantic East North Central West North Central South Atlantic East South Central West South Central West South Central Mountain Pacific	-13.0 -18.7 -19.7 -17.5 -25.0 -19.8 -17.3 -19.4	+ 2.6 - 1.3 - 5.3 -17.7 -13.8 -13.2 -19.9 -16.3 + 4.9	-21.8 -20.7 -22.6 -29.2 -31.9 -33.4 -44.0 -32.6 -15.1		

SOURCE: Net Migration from the Rural Farm Population, 1940-50, Statistical Bulletin No. 176, June, 1956, Table 1, p. 16.

the west North Central and west South Central having the highest rates. During the 1940-50 period the relative variation between geographical regions was again reduced, although the entire south and the west North Central regions experienced rates of out-migration above those for other regions.

One should not conclude immediately that this has been entirely a movement of people from what we generally classify as "the low-income areas" in agriculture (Table 2). For the decade 1940-50 the net migration from serious low-income farming areas was only one-third above that of the higher income areas. Among the generalized low-income farming areas classified by the Department of Agriculture there were many geographical regions from which the rate of out-

¹The method used to compute the rate leaves out the migration of persons born and those dying during the decade. See Gladys K. Bowles, Farm Population—Net Migration From the Rural-Farm Population, 1940-50, Statistical Bulletin No. 176, U.S. Dept. of Agric., June, 1956, p. 167, for the methodology used in estimating rates.

migration was below that from medium- and high-income areas. Thus the rate of out-migration from a specific area depends upon a complex of socioeconomic factors of which relative income level is but one.

A majority of the migrants from agriculture have gone to the large urban metropolitan areas of the North and West. The popular concept of large-scale movements from the South to Detroit and Chicago are

TABLE 2

NET MIGRATION RATES FROM DIFFERENT FARMING AREAS CLASSIFIED BY
INCOME LEVELS, UNITED STATES

Area	Rate of net migration*		
	1930–40	1940-50	
Rural-farm Medium and high-income farming areas Low-income farming areas† Moderate low-income farming areas. Substantial low-income farming areas Serious low-income farming areas Generalized low-income farming areas† Appalachian Mountains and border areas. Southern Piedmont and Coastal Plains. Southeastern Hilly. Mississippi Delta. Sandy Coastal Plains of Arkansas, Louisiana, and Texas. Ozark-Ouachita Mountains and Border. Northern Lake States. Northwestern New Mexico. Cascade and Rocky Mountain areas.	-12.5 - 8.3 -13.9 -14.2	-30.9 -28.0 -33.8 -27.8 -34.9 -36.9 -27.8 -34.8 -34.5 -39.9 -49.1 -33.4 -29.2 -39.6 -16.0	

^{*} Change due to migration expressed as a percentage of farm population alive at both beginning and end of decade.

based on fact. The 1950-57 net imigration to Michigan is estimated at about 520,000 persons.² The high concentration of the in-migrants is illustrated by the estimate that two-thirds of the in-migrants went to the three counties including and adjacent to Detroit. Other northern and western metropolitan areas have had approximately similar experiences.

[†] Areas delineated in "Development of Agriculture's Human Resources—A report on Problems of Low-Income Farmers." Low-income farms were classified on the basis of three criteria for State Economic Areas: (1) Farms in State Economic Areas average less than \$1,000 residual farm income to operator and had farm-operator family level-of-living index below the regional average and 25 per cent or more of commercial farms classified as "low production." (2) Average farm-operator level-of-living index for the State Economic Areas was in the lowest fifth for the nation. (3) Fifty per cent or more of commercial farms in State Economic Areas were classified as "low production." Areas denoted as Serious in Table 2 met all three criteria; areas denoted as Substantial met any two of the criteria; areas denoted as Moderate met any one of the criteria.

[†] The generalized areas represent geographic groupings of the low-income farming areas. Source: Net Migration from the Rural Farm Population, 1940-50, Statistical Bulletin No. 176, June, 1956, Table A, p. 13.

² J. F. Thaden, "Population Growth Components and Potential in Michigan" (Inst. for Community Devel. and Serv., Contin. Educa., Michigan State Univ., mimeographed, Jan. 16, 1959), Table 11.

What has been true generally for migration from agriculture has been particularly true of nonwhites. They have concentrated very heavily in large urban areas.3 Thus the migration from farm areas has contributed very significantly to the growth of the labor force of the large urban areas. Some of the impacts of these movements upon the receiving areas will be discussed in a subsequent section.

Who Has Migrated from Agriculture?

Much economic theory has as an underlying assumption that units of resources are homogeneous and that, therefore, resource transfers are neutral as to the resulting character of that portion of the resource not transferred. We know, however, that human resources in agriculture are not homogeneous, so that who migrates from agriculture has an effect beyond the mere numbers involved upon both agriculture and the receiving sector of the economy.

Sociologists have attempted to isolate the differential characteristics of migrants. However, no clear-cut generalizations appear possible as to whether migration selects the least able or the most able, those with the most initiative or those with less.4

There is little question that migration from agriculture is closely related to age. More than one-half of the farm population age 10-19 in 1940 had left the farm by 1950. About 40 per cent of the age group 20-24 in 1940 migrated prior to 1950. However, less than 20 per cent of those 30-49 years old in 1940 migrated from the farm during the subsequent decade.6

There is some relationship between the age at which out-migration has generally occurred, race, and educational attainment of the outmigrant. One study shows that migration rates from the rural farm areas for the 1940-50 decade were highest from the lower levels of education and roughly similar among those completing more than five years of schooling.⁷ The migration rate from the nonwhite rural farm population aged 20-34 in 1940 was roughly similar for all educational levels up to high school. The migration rate for nonwhites with a high school education or beyond was much higher.

These conclusions for the 1940-50 period are approximately the reverse of those of Bogue and Hagood for the 1935-40 period. They

³ Conrad Taeuber, "Economic and Social Implications of Internal Migration in the United States" (a paper presented for the joint meeting of the American Farm Econ. Asso. and the Rural Sociological Soc. at Ithaca, N.Y., Aug., 1959), p. 11.

⁴ Conrad Taeuber, *ibid.*, p. 10.

⁵ This apparently has been true for as far back as 1920. See Carter Goodrich *et al.*, Migration and Economic Opportunity (Univ. of Pennsylvania Press, 1936), p. 690.

^o Gladys Bowles, op. cit., p. 17.

^c C. Horace Hamilton, "Educational Selectivity of Rural-Urban Migration: Preliminary Results of a North Carolina Study," Selected Studies of Migration Since World War II (Milbank Mem. Fund), Table 3.

found that migration during that period selected the better educated of the rural farm population, except that migration from the cotton belt contained disproportionately large numbers of the least well educated as well as the better educated.⁸

These two studies of rural-urban migration suggest that the pattern of educational selectivity has changed. This hypothesis is supported by two studies of migration over time from specific rural areas. They suggest that during the thirties there was a positive selectivity related to education among rural-urban migrants. However, during and since World War II there has been much less selectivity. This probably can be attributed to the improved economic opportunities in the non-farm economy and to a general increase in educational levels in rural areas, at least up through the eighth grade.

One final point should be made regarding who has migrated. The statistics discussed relate only to net migration, which is the result of movement in both directions. Thus some of the present agricultural population are persons who left agriculture and for some reason returned. Unpublished data from the Bureau of Old Age and Survivor's Insurance (Social Security) show that about one-third of the covered farm operators in 1955 worked off the farm in covered employment in previous years but were not doing so in 1955. Many of these farmers had higher incomes in their nonfarm employment than from farming in 1955. Apparently these individuals either found values in farming that overrode income considerations, or they were unsuccessful in making a transfer to the nonfarm economy and had to return to farming. Thus it is probable that even the high migration rates of the past twenty years do not reflect all of the persons who would be willing to leave agriculture if permanent employment opportunities were available.

The Impact of the Out-migration on the Agricultural Economy

One of the effects of the out-migration has been to reduce the number in the farm population, since the out-migration has exceeded the rate of natural increase. Thus an out-migration of about 25 million has reduced the farm population from 32 million in 1920 to about 21 million at the present time. Between 1929 and 1958 agricultural employment declined more than 40 per cent. The number of places classified as farms by the Census also has declined rapidly, and as a result we have had encouraging rises in statistical averages relating to per

⁸ Donald J. Bogue and Margaret J. Hagood, Subregional Migration in the United States, Differential Migration in the Corn and Cotton Belts, Vol. II (Scripps Found., 1953), p. 57.

⁸ See B. H. Luebke and J. F. Hart, "Migration From a Southern Appalachian Community," Land Econ., Feb., 1958, p. 50, and Joe A. Martin, Off-Farm Migration: Some of Its Characteristics and Effects Upon Agriculture in Weakley County, Tennessee, Bul. 290 (Univ. of Tennessee Agric. Exp. Sta., Aug., 1958), p. 21.

farm and per capita incomes. However, these aggregate statistics can often be misleading, and it is necessary to raise other questions as to the effects of the out-migration. The pertinent questions would seem to be: (1) Has the out-migration reduced the gap in income between farm and nonfarm people? (2) Has out-migration brought an improvement in the relative income position of areas of chronic poverty in agriculture?

If the average per capita income of the farm population from farming is compared with that of the nonfarm population for the five years prior to World War I, five years in the late twenties, and for the most recent five years, there is no evidence that the gap is closing. From 1910 to 1914 the farm population's per capita income from farming averaged 38 per cent of the nonfarm average per capita. 10 From 1925 to 1929 the income from farming of the farm population averaged 33 per cent of the nonfarm level, and for 1954-58 the comparable figure was 35 per cent. Of course, in recent years the income from farming accounts for only two-thirds of the per capita income of the farm population. However, earnings from outside agriculture do not enter into the question of whether the agricultural industry is producing a relatively higher level of income after a period of heavy out-migration. Actually, inclusion of the nonfarm sources of income for earlier periods would probably make little difference.11

Since the average family size in agriculture has been larger than in the nonfarm population, comparisons of income per worker might be considered more valid. Income per worker in agriculture from farming amounted to 61 per cent of the average annual wage per employed factory worker for the years 1910-14.12 The average for 1925-29 was 44 per cent and in 1954-58 was 45 per cent. There is no evidence of significant relative gains on either a per capita or per worker basis. Therefore, while there have been significant gains in real income in agriculture in the past four decades the rate of gain has probably little more than kept pace with that in the nonfarm economy.

Neither does the evidence support the contention that rapid outmigration has greatly improved the relative position of the low-income areas in agriculture.

It has been generally known that the poverty problems of agriculture are largely concentrated in the South so that it might be assumed that the heavy out-migration from this area would result in a sharply lower proportion of the total farm population now in that region. Surprisingly, however, the change has been only moderate. In 1920 the South had 53 per cent of the farm population and in 1958 it had 49 per cent of the

Computed from Table 7, Farm Income Situation (July, 1959).
 See Possible Methods of Improving the Parity Formula (U.S. Dept. of Agric., mimeograph, Jan. 31, 1957) for some estimates of the effects.
 Computed from Table 8, Farm Income Situation (July, 1959).

total farm population. One-half of this percentage decline has occurred since 1950. Thus high birth rates in the South have partially offset the higher rates of out-migration over much of the last four decades.

Cheng found in his Michigan study that the disparities in farm income and wages between the higher income and lower income regions of the state have widened in spite of the fact that out-migration has been much higher from the low-income regions.¹³

Bishop found that despite the out-migration and increased resource productivity, net income per farm family in the southeast declined relative to the net income per farm family in other regions from 1939 to 1949.14

Figures are not presently available which give us regional and state comparisons of per capita incomes in agriculture for earlier periods. Therefore, it is not possible to determine accurately whether the heavy out-migration from southern agriculture has improved its relative income position. There are, however, some trends in the aggregate figures for regions which support the conclusions that the South has made little relative gain during the past fifteen years despite the large outmigration from its low-income agriculture.

An analysis of regional trends in per capita incomes of the total population by the Department of Commerce shows for the period 1927-29 to 1944 there was a marked reduction in the disparity in per capita incomes between regions.¹⁵ Most of the reduction occurred between 1940 and 1944. Since 1944, when the greatest out-migration from agriculture has occurred, there has been little change in the relative position of the regions. Even when the relative incomes were converging, the absolute gains in income were much larger in the higher income regions.

There are several reasons why out-migration has not resulted in significant and dramatic reductions in income differentials within agriculture and between agriculture and the nonagricultural economy. They are: the migration to date has affected commercial agriculture less than we realize; where migration has occurred its selectivity has created conditions tending to retard the recombination of remaining resources; and much more than a simple recombination of existing resources is necessary to bring an improvement in the income levels of most of the poverty plagued areas in agriculture.

Turning to the contention that out-migration has affected commercial

¹³ Kenneth C. I. Cheng, "Economic Development and Geographical Wage Rates in Michigan 1940-57" (unpublished Ph.D. thesis, Michigan State Univ., 1959).

¹⁴ See Charles E. Bishop, "Economic Development and Adjustments in Southeastern Low Income Agriculture," *J. of Farm Econ.*, Dec., 1954, p. 1151.

¹⁵ U.S. Dept. of Com., *Personal Income by States Since 1929, A supplement to the Survey of Current Business* (1956), pp. 24-26.

¹⁶ U.S. Dept. of Com., U.S. Income and Output, a Supplement to the Survey of Current Business (Nov., 1958), p. 37.

agriculture less than might be assumed, some evidence is seen in the statistics relating to changes in numbers of farms. For our purposes it might be useful to classify farms as falling into one of three types: commercial farms (roughly Class I through IV of Economic Class of Farm defined in the last Census of Agriculture); low-production farms (Class V and VI); and rural places to live (part-time, residential, and subsistence farms). If past censuses are adjusted for changes in farm prices, the trends in agriculture are these: 17 the number of commercial farms has been remarkably stable since 1929; the number of rural places to live has trended slightly upward; and the number of low-production farms has declined very sharply.

About 1.1 million of the 1.8 million low-production farms that disappeared between the 1930 and 1954 Census of Agriculture were in the South. However, this does not imply quite the degree of resource mobility for nonlabor resources that it might seem to, because about half of the reductions were of cropper farms which were not actually independent management units. Whereas the decline in the number of low-production farms has been greater in the South, the largest decline in the number of management units has been in the North and West.

There are further indications that the farms that have disappeared as people left agriculture were the smaller, less-productive farms. The decline in number of farms has been greatest among farms of ten to ninety-nine acres in size. In 1920 farms in this size group made up 54 per cent of the total number of farms, but they controlled only 17 per cent of the land in farms. Between 1920 and 1954 there was a decline of 1.4 million in the number of farms between ten and ninety-nine acres. However, the amount of land which these farms contained and which, under ideal circumstances, might have been consolidated into larger units amounted to less than 6 per cent of the total land in farms in 1954. Thus the 63 per cent increase in the average size of farm in the United States from 1920 to 1954 is largely a statistical freak. Actually, there have been few increases in the numbers of farms in the various larger size groups and in the average size within the various groups.

The high degree of age selectivity in migration appears to be an important factor inhibiting the adjustment of resources remaining in agriculture. As a result of the disproportionately heavy out-movement in the younger age groups the average age of farm operators has risen. Whereas 21 per cent of the operators in 1920 were in the twenty-five to thirty-four age group and 26 per cent were over fifty-five years old,

²⁷ Jackson V. McElveen, Family Farms in a Changing Economy (USDA Inf. Bul. No. 171, Mar., 1957), p. 20.
²⁸ U.S. Dept. of Com., 1954 Census of Agriculture, Vol. II, Chap. V, pp. 253 and 355.

in 1954 only 13 per cent were in the younger bracket and 37 per cent were over fifty-five.19

Older farmers are less likely to undertake drastic reorganizations of existing resources themselves because of limits of their physical capabilities and the limited span over which they might realize returns on large investments. Studies of low-income farming areas in South Carolina, Tennessee, and Arkansas all mention that the advanced age of many farm operators inhibits the adjustment of agricultural resources.20 Apparently many older owners are unwilling to enter into contractual arrangements which will make it possible for the remaining younger farmers to organize existing agricultural resources in a satisfactory fashion. Thus institutional arrangements relating to tenure and credit, which were developed in a period of greater stability in technology and in the agricultural labor force, do not seem to be adjusting adequately to the rapid changes of recent years.

Adjustment problems in agriculture following a decline in the labor force are much more complex than a mere change in the capital-man ratio. Generally, the type of farming operation needs to be changed. New technology, new investment, and new management skills are required in order for the recombined resources to be productive. Old investments in buildings and equipment are often obsolete, requiring large additions of capital in new forms. The mere out-movement of labor from agriculture is a necessary, but not sufficient, condition to achieve these adjustments. Unfortunately, most of the people capable of making such adjustments may be among the out-migrants.

Even where heavy out-migration has occurred resource adjustments in agriculture may not tend to correct income inequalities. Bachmura found that population movements as a whole within a group of Mississippi Valley counties were not corrective in an income equilibrating sense.²¹ In addition, he concluded that movements in capital investment per worker were noncorrective over the decade.22

Long-distance migration may be of much less help to agricultural adjustment than nearby nonfarm growth. There are indications that the adjustments are made more rapidly where the growth in nonfarm

Ibid., p. 1041.

¹⁰ U.S. Dept. of Com., 1954 Census of Agriculture, Vol. II, Chap. II, p. 83. The relative rise in noncommercial farms and the Census definition of an operator contributed to this

rise.

20 See Thomas A. Burch and Charles P. Butler, Physical and Economic Characteristics that Limit Adjustments on Full-Time Medium Sized Farms in the Piedmont Area of South Standard Mary 1958, p. 47: Martin, op. cit., Carolina (South Carolina Agric. Exp. Sta. Bul. 453, Mar., 1958, p. 47; Martin, op. cit., p. 34, and William H. Metzler and J. L. Charlton, Employment and Underemployment of Rural People in the Ozark Area (Univ. of Arkansas Agric. Exp. Sta. Bul., 604, Nov., 1958),

p. 55.
²¹ Frank T. Bachmura, "Migration and Factor Adjustment in Lower Mississippi Valley Agriculture: 1940-50," *J. of Farm Econ.*, Nov., 1956, p. 1033.

employment is local. Ruttan found that rural farm areas in the southeast which "caught up" with the national average between 1930 and 1950 were close to developing urban centers.²³ Cheng found the same tendencies in Michigan.

The Impact of the Out-migration on the Nonfarm Economy

In the nonfarm economy as well as in the farm economy the heavy out-migration from agriculture has had both positive and negative aspects. During the periods of extreme labor scarcity the migration was appreciated and encouraged, but more recently some of its negative aspects have received more attention.

The nonfarm economy has attracted over 25 million people from the farm population since 1920. A high proportion of the migrants have been in age groups enabling them to be in the productive labor force. The migration, coming as it did at a time when new entrants to the labor force were low because of low urban birth rates in the twenties and thirties, was about the only way in which a large expansion of the nonfarm labor force could occur without immigration. Ducoff estimated that one-half of the expansion in the nonagricultural labor force from 1930 to 1954 came from migration from the farm population.²⁴ It would have been impossible to have increased nonfarm output to wartime and postwar levels without this increase in the labor force. Without the migration from farms, the price of nonfarm labor relative to other inputs probably would have risen more sharply than has been the case.

The nonfarm economy has received through the process of migration a large transfer of capital from the farm economy in the form of investment in the rearing and educating of farm youth to the age at which they migrated.25 As a result, the nonfarm economy has received a large and significant quantity of productive resources in the form of productive labor without having to incur most of the initial expense of its rearing and education. This should contribute to a rapid rate of capital accumulation and growth in the nonfarm economy.

Not all of the effects of rural-urban migration have been positive for either the migrants or the receiving areas. First, the assimilation of large groups of people from different cultural backgrounds has presented some of the same problems as did the earlier mass influx of immigrants. Existing educational systems, social groupings, and eco-

²³ Vernon W. Ruttan, "Discussion of Development and Adjustment," J. of Farm Econ.,

Dec., 1954, p. 1159.

24 Louis J. Ducoff, "Trends and Characteristics of Farm Population in Low Income Farming Areas," J. of Farm Econ., Dec., 1955, p. 1407.

25 James D. Tarver estimated that an investment of \$15,000 in 1954 prices was required.

to rear and educate a farm child to age eighteen. See his "Costs of Rearing and Educating Farm Children," J. of Farm Econ., Feb., 1956, pp. 144-56.

nomic structures have been disrupted by the rapid influx of migrants into some urban areas. There has been a problem in some areas of the rapid replacement of the old population of central cities by migrant nonwhites whose economic status is low, adding considerably to the difficult adjustment problems already mounting in urban areas.

The receiving areas have become increasingly aware of the cost of assimilating the migrants. A recent Michigan study reported that although persons born in the South make up only 9.5 per cent of the state's population, they accounted for 31 per cent of the prison commitments.²⁶ When a commitment rate is computed for different population groups, the rate for whites born in the South is more than twice the rate for whites born in Michigan. Approximately the reverse was true for Negroes. The heavy burden of welfare costs to migrant groups has prompted recent suggestions of sending migrants out of one city and of increasing the residence requirements for welfare in several others.

The public problems that have arisen as a result of the migration to urban areas are partially because the migrants themselves sometimes have found the adjustment to the new economic and social environment difficult. They have found themselves unskilled labor in an industrial society which is increasingly replacing unskilled labor with skilled labor and machines. They have found that the impact of the nonfarm business cycle falls heaviest on the younger, the less skilled, and the nonwhite worker. They have found racial and other forms of discrimination among labor unions.

A recent paper summarized several sociological studies of the position of rural migrants in urban society.²⁷ It made the following points: (1) Many of the rural migrants lack the educational training or social background necessary to make them other than marginal members of the nonfarm society. (2) Rural migrants tend to move to lower standard housing areas and upgrade their housing less through moving than do urban migrants. (3) The rural migrant tends to participate less in formal and informal social and political organizations than other groups of the urban population. (4) Despite many of these less favorable aspects, the migrant generally would make the move if he had to make the decision again.

Summary and Conclusions

Migration from agriculture over the past four decades has touched virtually every community in the United States, both farm and non-

²⁶ "Non-natives Cause Most Crime in State," The State J. (Lansing, Mich.), Nov. 3, 1959, p. 16.

²⁷ George M. Beal and Wallace E. Ogg, "Secondary Adjustments from Adaptations of Agriculture," in *Problems and Policies of American Agriculture* (Iowa State Univ. Press, 1959), pp. 226 ff. ▶

farm. Without out-migration the present problems of United States agriculture would have been magnified manyfold, and the gap between per capita incomes in the farm and nonfarm economy certainly would have widened. As yet, however, there is no evidence that the rapid rate of out-migration has appreciably closed the gap that existed in per capita incomes of farm and nonfarm people. Neither has the migration from agriculture apparently significantly changed the per capita income distribution between regions in agriculture.

Despite its magnitude, the out-migration from agriculture probably has affected that portion of agriculture producing the bulk of our food and fiber relatively little. Most of the out-movement has been from farms with few resources. There are widespread indications that the out-migration has severely strained the social and economic structure of many rural communities, causing serious problems for churches, schools, and rural businesses dependent on numbers of population.

Most of the policy proposals to facilitate the migration from agriculture have been to improve rural education, job information, and human mobility. These would be of primary benefit to the migrants themselves and to the receiving communities. Few, if any, policies have been proposed that are aimed at alleviating the serious social and economic problems of communities which have been or will be rapidly losing population. Also, little attention has been given to policies to promote the new institutions that will be necessary to facilitate rapid adjustment of the resources remaining in the agricultural economy.

The farm-nonfarm migration has had desirable effects and yet has created problems for the nonfarm economy. Migration made possible an expansion of the nonfarm labor force when the pressure for increased nonfarm output was great. It has also created social and economic problems for which solutions are not yet apparent. It seems probable that the problems will become greater and the benefits of farm-nonfarm migration somewhat less evident to the nonfarm areas in the decade ahead. Unlike the past twenty years, during the next decade there will be a rising number of persons annually available to enter the labor force from within the nonfarm economy. This will be due to the marked rise in birth rates during and since 1940. Thus the need for attracting new labor from the farm population will diminish and the problems of assimilating migrants will probably weigh more heavily upon the consciousness of prospective employers.

All this is to say that even with the favorable economic and social conditions of the past two decades a simple policy of rapid out-migration from agriculture has not, by itself, been sufficient to bring significant improvement in the relative position of the farm economy.

Migration has left unsolved many pressing problems it has helped create.

The total effect of the migration from farms has apparently been of value to both the farm and nonfarm economies. Therefore, it would appear that the nation could well afford some public policies to cope with the social and economic problems attendant to migration. Without such supplemental forces it is unlikely that migration will, by itself, bring about a significant improvement in the position of agriculture.

PRIVATE AND SOCIAL COSTS OF THE MOVEMENT OF PEOPLE OUT OF AGRICULTURE

By James G. Maddox North Carolina State College

The movement of people out of agriculture has proceeded at an unusually rapid rate since about 1940. Nevertheless, the generally lower returns to labor employed in farming as compared to that employed in most nonfarm occupations suggests that the incomes of many farm people could be raised and the productive efficiency of the national economy could be improved by a still greater shift of population away from farms. Moreover, the relatively high birth rates among farm families, the growth of laborsaving technologies in farming, and the differences in demand elasticities as between farm and nonfarm products provide good reasons for believing that off-farm migration will continue at high levels in the future if rapid growth rates in the nonfarm sectors of the economy are maintained.

Population shifts, however, result in costs as well as benefits, and the people who bear the costs are often not those who reap the gains. Serious inequities can, and do, arise. The scope and nature of these inequities need to be examined, and ways and means of offsetting or ameliorating them need to be devised. This calls for empirical research, which is aimed specifically at defining and measuring both costs and benefits resulting from off-farm migration. Such research can probably best be done through a series of regional studies which would establish for each of several selected regions four separate sets of accounts. One set would show the costs and benefits to the migrants themselves—the people who move to nonfarm jobs and new places of residence. A second set of accounts would reflect costs and benefits of out-migration to business firms, private individuals, government agencies, and public institutions in the areas from which the migrants originate, A third set of accounts would pertain to costs and benefits for essentially the same kinds of organizations and individuals in the areas to which the migrants move. The fourth set of accounts would reflect costs and benefits to the rest of the economy. Studies in a framework of this general nature would have to cope with thorny problems of definition and evaluation, but the task does not appear to be impossible.

This paper, however, veers away from the methodological problems involved in research. Its main purpose is more modest. The aim here is to identify some of the costs of off-farm migration and to draw a few conclusions about their relevance to policy formulation. The benefit

side of the ledger is completely ignored. Attention is focused on three broad categories of costs: those which fall on the migrants themselves; those which fall on the communities from which they move; and those which fall on communities to which they move.

I. Costs to Farm People Who Move Out of Agriculture

All people who move out of agriculture are faced with two direct cash costs, and many of them are also faced with two additional indirect costs. The cash costs are: outlays for transporting themselves and their material possessions from their farm residences to their new places of abode; and the added outlays for food and lodging which are incurred during the period between the time they leave the farm and the time they find a job and a place to live in their new nonfarm setting. Some migrants will also incur an opportunity cost represented by the loss of income which might have been earned in agriculture during the period of transition. Finally, many farm people who move away from home experience a subjective or psychic cost.

Are these four types of costs of such size and significance as to be important in the formulation of public policy? Although there is a great paucity of information on which to base an answer, I venture the following opinions as plausible hypotheses. First, the opportunity cost is of such minor importance that it can be ignored. Second, the cash costs of transportation are of minor significance. Third, the costs of food and lodging during the transition period, above the level of such costs on the farm, are not of great importance, provided the transition period between farm and nonfarm employment is not unduly long. Fourth, the subjective or psychic costs, though difficult to define and measure, have both personal and social implications which cannot safely be ignored.

The view that transportation costs are of relatively minor importance stems from a few simple calculations. A person can travel by bus from Jackson, Mississippi, to Buffalo, New York, a distance of 1,159 miles, for \$34.88. Train fare, including the 10 per cent federal tax, is about nine dollars higher. If we allow four cents per mile as the cost of operating an automobile, and assume three people per car, the cost of automobile transportation per person from Jackson to Buffalo would be only \$15.45 (Table 1). A person can travel by bus or train from Atlanta, Georgia, to either St. Louis, Chicago, Buffalo, or Philadelphia for a transportation cost which ranges between \$16.00 and \$36.00. From Pierre, South Dakota, to Chicago the bus or train fare per person is around \$20.00 to \$23.00. In all these cases, the cost of travel by automobile, calculated at four cents per mile and three persons per car, will be lower than bus or train fares (Table 1).

TABLE 1

Cost of Transportation Per Person from Five Selected Cities in Regions
Characterized by Heavy Out-Migration from Agriculture to Five
Selected Cities in Industrial Areas*

	Cities of Origin						
Cities of Destination and Modes of Travel	Dallas, Texas	Jackson, Mississippi	Atlanta, Georgia	Raleigh, North Carolina	Pierre, South Dakota		
St. Louis, Missouri Bus	\$16.88	\$14.52	\$16.00	\$24.64	\$23.70		
	20.24	15.87	21.19	32.57	32.19		
	9.09	6.87	10.33	9.07	11.43		
Chicago, Illinois Bus Train Automobile	21.39	17.98	20.62	26.12	19.80		
	30.38	24.44	24.22	35.14	23.17		
	12.95	10.06	9.67	10.93	10.57		
Philadelphia, Pennsylvania Bus Train Automobile	41.24	33.99	23.98	12.87	45.15		
	52.88	41.23	33.50	15.33	60.17		
	20.56	15.20	10.33	5.27	20.68		
Buffalo, New York Bus Train Automobile	38.11	34.88	27.17	22.71	36.52		
	49.39	43.48	36.02	29.00	46.98		
	18.79	15.45	12.01	8.41	17.79		
Los Angeles, California Bus Train Automobile	42.29	55.66	62.64	73.70	52.63		
	46.62	58.83	71.01	85.14	65.59		
	19.33	24.92	30.52	36.13	21.35		

^{*} Bus fares are from national passenger tariff No. A-1000, MP-ICC 774 by National Bus Traffic Asso. Inc., plus 10 per cent federal tax; train fares from the Seaboard Airline R.R., and include the 10 per cent federal tax; automobile transportation calculated by assuming a cost of four cents per mile and three persons per automobile. The data were obtained and the table arranged by Harold E. Voelkner, graduate assistant, Dept. of Agric. Econ., N.C. State Col.

Even if costs of these magnitudes are increased by 20 to 30 per cent to cover local transportation in the originating and receiving areas, it is difficult to attach great importance to them. They are probably higher than the costs most farm people actually incur when they move to nonfarm jobs. Many people move much shorter distances when they leave farms than the preceding illustrations suggest. Moreover, there are various ways of traveling at quite low cost. For instance, there is a tremendous amount of interregional automobile travel on the part of former farm families from the South who have made the shift to nonfarm employment in the North and East and who return to visit relatives and friends in the rural communities where they previously lived. This type of visiting provides the best interregional employment service which the South now has. The return trips of these visitors to their homes in urban areas also provide cheap means of transportation for

additional farm people to shift out of agriculture. In some areas, there are special truck and bus operators who transport migratory workers at fares lower than those of regularly scheduled buses. Finally, farm boys, as well as college boys, still do a considerable amount of hitchhiking.

It is probable that the cost of food and lodging during the period which elapses between the time the ordinary farm person leaves his rural community and the time he finds a job and a place to live in his new nonfarm location is a larger item than transportation costs. This will depend mainly on the length of time required to make the transition. Apparently very little is known about the ways in which farm people shift to nonfarm jobs and the difficulties which they encounter in making the change. At least, I have been unable to find information relative to the length of the transition period or the costs commonly incurred. If we assume fairly full employment conditions, such as we have had during most of the period since World War II, it would appear that a ten-day average period between farm and nonfarm employment and a daily allowance of \$5.00 per person to cover the added cost of food and lodging during this period would not be unreasonable for many people who shift out of the South or Great Plains regions to northern and eastern cities. No doubt, many farm people have made this kind of move without increasing their regular costs of food and lodging by as much as \$50.00.

By adding a figure of this magnitude to transportation costs at the levels previously illustrated, I conclude that many farm people can travel as far as five hundred miles from their homes, take ten days to find a nonfarm job, and wait a week for their first pay check after they start to work, with a nest-egg of no more than \$100 per person. In actual practice, I believe that many people make the shift and expend a lesser amount. This is especially true for family groups which travel by automobile and for single individuals who live with relatives or friends while they are searching for urban employment. Costs of this magnitude can hardly be viewed either as serious impediments to off-farm migration or as the source of injustice to the people who move.

The average length of the transition period between farm and non-farm employment may be longer than ten days. This is another way of saying either that nonfarm jobs of the type for which farm people can qualify are scarce, even during periods of relatively full employment, or that communications between prospective job seekers and potential employers are quite imperfect. Both factors may tend to lengthen the transition period beyond the ten days assumed in the preceding illustrations. The policy implications are that attention needs

to be focused on creating an effective interregional employment service and on devising ways and means of aiding farm people to quickly find suitable living facilities when they move to urban areas. Both types of action would tend to decrease the private cash costs incurred by the migrants and also to reduce the social costs of transitional unemployment.

The psychic costs experienced by people who leave farms are not readily amenable to economic interpretation. Two points, however, may be worth noting. First, many farm people, especially in culturally isolated areas, have emotionally-based barriers against moving to nonfarm occupations in urban centers. The emotion is probably fear-fear of irregular and uncertain employment and fear of the impersonal characteristics of urban ways of living. These barriers, like other impediments to migration, result in opportunity costs to society, in the sense that the national labor force is not as efficiently utilized as it would be if they did not exist. Second, among a relatively small percentage of farm people who move to urban centers, the attempts to compensate for the psychic losses incurred in leaving their home communities result in antisocial behavior which is costly to them, to public agencies, and to society. Extreme manifestations of this type of behavior are alcoholism, the use of narcotics, and various types of delinquency and crime. This kind of behavior is probably no higher among farm people who move to cities than among other low-income people who live in congested urban areas, but its existence should be recognized.

Although it may be impossible to evaluate these psychic costs for accounting purposes, it seems evident that appropriate public policies could make significant progress in lessening their impacts. This could be accomplished in part through enlarged educational and cultural opportunities for farm people. In some of the most isolated rural areas a combined program of family counseling, labor recruitment, and vocational training for nonfarm work is clearly needed. Equally important is the need for a more rapid and continuous expansion of the total economy and for a wider geographic disperson of new industrial plants. With much room for constructive public action in these fields, it appears unwise to take a defeatist attitude toward the significance of psychic costs.

II. Costs in Areas from Which Farm People Move

Although the costs borne by the people who shift out of farming do not appear to be a serious burden to most of them, the farm families, educational institutions, and business firms that are left behind in the areas from which out-migration occurs bear a heavy share of the total

costs associated with the movement of people out of agriculture. The nature and extent of these costs for a given area depend mainly on the relative size and speed of the out-migration from the area. The range of conditions is wide. At one extreme there are a few rural communities in which the returns to most of the labor employed in agriculture is about the same as that for labor employed in reasonably comparable nonfarm work, and in which natural rates of population increase and production conditions are such that this relationship between farm and nonfarm earnings can probably be maintained with no greater outmigration than that represented by maturing farm youths who are not needed to replace the people who die and retire from farming. At the other extreme are areas in which the average returns to labor employed in farming have long been much lower than in nonfarm occupations, in which natural rates of population increase are high, and in which farming opportunities are so limited that farm abandonment has already occurred on a large scale and will probably continue until most of the land reverts to grass or timber. Between these two extremes are a continuum of farm communities from which out-migration will drain off various proportions of maturing youths and adults.

In those communities in which off-farm migration is limited mainly to maturing young people, the principal costs associated with it are those of rearing and educating children who move away from their farm homes about the time they reach a productive age. The costs are much more extensive, however, in areas where farming is virtually abandoned. In such areas total income will usually decline and, as a result, the capital values of fixed assets, both public and private, will decrease; the per capita costs of maintaining essential public services for the few remaining residents will rise; and many local businesses will go bankrupt or be forced to move to other areas. These are serious burdens in many areas and are a source of much opposition to off-farm migration as a method of raising per capita farm incomes. In areas between the two extreme situations, where capital is rather easily substituted for the decreased labor supply, the costs of out-migration will generally be somewhat more than those of rearing and educating children but less than those in areas that are reverting to grass or timber. In general, the deleterious "side effects" of off-farm migration on the individuals and organizations in the communities from which it occurs are not likely to be serious unless they result in a decline in total community income or in the draining away of superior human talents.

One serious inequity which arises in all of these situations results from farm families producing human capital from which they receive few financial returns. The costs of rearing and educating children are investments in potentially productive assets. Thousands of these assets,

however, are annually transferred from farm to urban areas at about the time they reach a productive age. Approximately 36 per cent of the net decline in rural-farm population of 8.6 million people which occurred during the forties was children under fifteen years of age at the beginning of the decade; over 50 per cent were under twenty years of age. Thus farm families and locally supported educational institutions in a sector of the economy which is chronically short of capital are heavy contributors to the national supply of human capital. A poignant aspect of the situation is that those farm communities in which incomes are lowest, land the poorest, and capital in shortest supply are proportionally the heaviest contributors. This very fact tends to keep these areas poor, and poverty, in turn, perpetuates the propensity to rear children.

This process by which a large part of the national labor supply is produced and distributed to jobs is both inefficient and inequitable. It is inefficient because much of the labor which emanates from rural communities is poorly equipped to perform the services which are in strongest demand. It is inequitable because the farm families and local educational institutions which supply and prepare this labor for nonfarm jobs receive few returns from its contribution to national output.

Some of the farm-reared children who spend their productive lives in urban areas will transfer funds to their parents back in their home communities to offset at least a part of their rearing costs. Other parents of such children will themselves move to urban areas and reap some of the benefits in the form of enlarged economic opportunities and public services which are created as a result of the human capital that they, and others like them, have supplied to the cities. In other words, not all of the child-rearing costs can be written off as investments from which farm families receive no return. On the other hand, local educational expenditures on the farm child who moves to the city at an early age in life are almost a complete loss to the rural community and a free gift to the urban area. Local school districts can neither extend their taxing domain to distant cities nor conduct successful fund raising drives among their alumni.

Though an accurate estimate of the net drain of capital out of agriculture as a result of children moving away from farms cannot be made on the basis of existing data, it is not amiss to mention a few calculations which throw a little light on the problem. Tarver has made an extensive set of estimates which indicate that the net cost of rearing and educating a farm child through age fifteen was more

¹ Farm Population: Net Migration from the Rural-Farm Population, 1940-50 (U.S. Dept. of Agric. Statis. Bul. No. 176, June, 1956).

than \$11,000 at 1954 prices.2 Of this amount, the three items of food, clothing, and medical care totaled about \$5,000 for boys and \$4,700 for girls. The average annual net loss of farm people through migration and change in classification of residence for the period 1950-58 was 904,000.3 If 36 per cent of these were under fifteen years of age, as was the case with off-farm migrants in the decade of the forties, there was an average of approximately 325,000 children who left the farm population each year from 1950 to 1958 before they contributed very much to their rearing costs. If we assume that they averaged seven years of age at the time they left farms and were equally divided as between boys and girls, we can use Tarver's estimates and arrive at a gross cost of almost \$1,660,000,000 per year for rearing and educating these children.4

This figure is probably higher than the actual net drain of funds out of farm communities arising from this source. This appears to be true for at least two reasons. First, the Department of Agriculture estimates of net change in the farm population includes people who cease farming operations but continue to live in the same residences they occupied before quitting farming. Second, it is probable that a higher than average proportion of the children who actually migrate away from farm communities are members of relatively poor families whose expenditures per child are lower than the sample families on which Tarver based his estimates. I know of no way of making reasonable adiustments in the calculations for factors of this type. However, if the figure is cut in half, which brings it back to a level approximating the costs of food, clothing, and medical care, it is 6 to 8 per cent of the annual net income of farm operators from farming—a not insignificant amount. There is clearly the need for public action to redress this state of affairs if the national welfare is to be served.

This, however, is not sufficient. Extensive public aid is needed in many areas where off-farm migration is heavy. The South, in particular, is faced with a serious situation. Quite generally the process of adjustment is allowed to drag along much too slowly in areas where farm abandonment is heavy. Capital and entrepreneurship, as well as labor, are drained away with the result that large areas stagnate and remain dormant. The changes in land ownership and leasing that are necessary for new combinations of resources and a new inflow of capital take place slowly. There is need for public programs which will speed up the

² James D. Tarver, "Cost of Rearing and Educating Farm Children," J. of Farm Econ.,

Feb., 1956, pp. 144-53.

*Farm Population, Estimates for 1958 (U.S. Dept. of Agric., Nov., 1958).

*Tarver's estimates of the average cost of rearing and educating farm children through age seven is \$5,146 for boys and \$5,069 for girls.

process. Some people not only should be aided to leave agriculture but those who remain behind should be assisted to enlarge their farms and shift to new types of farming. This not only calls for capital but also for guidance in organizing and managing the new and enlarged units. Agricultural economists have been too prone to assume that the efficiency of southern agriculture could be greatly enhanced simply by "freezing-out" a large proportion of the small, low-income operators. Such a view overlooks the necessity for positive action to aid those who remain to obtain the capital and managerial know-how to organize and operate farms that are distinctly different in scale and combination of enterprises from the units to which they have been accustomed.

III. Costs in Areas to Which Farm People Move

When in-migration from rural areas is slow and amounts to only a relatively small proportion of the existing urban population, its costs in the receiving areas are not of great importance. On the other hand, when it is rapid and relatively large, it is likely to have several undesirable results. Public expenditures for schools, police protection, and similar governmental services will probably expand more rapidly than tax revenues and will still be lower relative to need than before the in-migration became significant. As a result the quality of public services will decline. In many cases, the average educational and cultural level of the urban population will be lowered because of the influx of poorly educated people from rural areas. This has clearly happened in many northern cities which have received large numbers of southern Negroes and low-income whites. The combined impact of declining quality of public services and a lowering of educational and cultural values not only creates serious social problems, but it can also have severe impacts on property values over fairly extensive urban areas.

The places in which both social and private costs of population shifts are most pronounced are in and around large metropolitan centers, where there is a heavy migration of rural people into the older residential areas of the central city while, at the same time, many urbanites are shifting to the suburbs. The two movements are not wholly unrelated, though the migration of countrymen into the central city can hardly be considered a major factor in explaining the shift to the suburbs. Mounting social costs of various types result from the distribution of population which is being brought about by the two streams of migration. One such result, for instance, is a rapid growth of congested city slums in the old residential areas of many large cities. There is also a vast utilization of capital for houses, shopping centers, streets, schools, and related facilities in the suburban areas, which

tends to keep capital expensive for all sectors of the economy. Likewise, there is an inordinate amount of travel and waste of time in going to and from the daily job as a result of the great distances between places of residence and places of work.

Although such costs as these clearly do not stem wholly from offfarm migration, it is equally clear that most of them could be lowered by a greater movement of industrial and commercial enterprises into areas of heavy rural unemployment. Even if this resulted in somewhat higher costs to the employing firms—a possibility not to be gauged solely by the continued expansion of industrial and commercial establishments in and around large metropolitan centers—the total of private, public, and social costs might still be reduced. This is a problem which needs much further study than it has yet received. It might well become the concern of agricultural economists to a much greater extent than has been true in the past.

One of the heavy costs of the present pattern of off-farm migration is the continued concentration of low-income, farm-reared people in the congested slums of large cities. The resulting psychic costs to the individuals involved must be extremely high. It is a way of life which is completely foreign to their past experiences, and commonly results in high rates of crime, juvenile delinquency, and absenteeism from jobs. These, in turn, result in heavy public expenditures for police protection and welfare activities. The waste of human resources arising from slum conditions of living is a social loss of imponderable magnitude. This country is much too rich and powerful to allow these blights of the city to continue.

IV. Conclusions

The movement of people out of agriculture is clearly not an unmixed blessing. The costs associated with it are both numerous and large. Nevertheless, off-farm migration is almost certain to continue at relatively high levels unless there is an unforeseeably large and continuing increase in the demand for farm products or, conversely, a prolonged and serious decline of employment in the nonfarm sector of the economy. Neither eventuality is to be expected.

There is, therefore, the need for a careful balancing of the costs and benefits of off-farm migration as they are manifested among different groups in society. Although this paper has not been concerned with the private and social benefits associated with the movement of people out of agriculture, they appear to be of minor offsetting significance to those rural communities which experience either a rapid decline in total population or a sustained outflow of a large proportion of the maturing

young people. These are the types of areas in which public action is most necessary to ameliorate the inequities arising from the shift of people out of agriculture. The appropriate public action will involve capital and income transfers into such areas on terms and conditions which will enhance both the abilities of the people and the productiveness of the organizational units by which the natural resources are utilized.

POLICIES TO IMPROVE THE LABOR TRANSFER PROCESS

By D. GALE JOHNSON University of Chicago

During the decade now ending, the net migration from farm to non-farm areas has totaled almost 10 million persons out of a farm population of slightly more than 25 million in 1950. Despite so high a rate of out-migration, the return to farm labor has not risen relative to labor earnings in the rest of the economy. The natural increase of the farm population offset about two-fifths of the net migration. The resulting net reduction of the farm population has simply not been great enough to offset the combined effects of a rapidly increasing physical product per worker, low and declining income elasticity of demand for farm products, and the low price elasticities of demand for farm output.

I. Background Data and Information

While the data on net migration from farm to nonfarm communities are indicators of an impressive fluidity of the farm population, the sum of the gross movements—farm to nonfarm, nonfarm to farm, and farm to farm—presents an even more striking picture. In 1950 the Census of Population indicated a farm population of 22,510,000.¹ The sum of the moves—a move is defined as living in a different house—was at least 4,800,000 for the single year 1949-50. This amounted to slightly more than 20 per cent of the 1950 farm population (*ibid*.). One is almost led to wonder how the crops and livestock were tended!

The 1950 Census of Population provides us with a mass of factual information concerning the characteristics of farm-nonfarm mobility. Since most of these data have become available only fairly recently and because they are relevant to my present topic—and no more recent data of similar detail are available—I beg your indulgence in relying on data referring to a period of a decade ago.

I will emphasize, in a large part, the data on movers rather than migrants, as defined by the census. Movers are defined as all persons who changed their residence, while a migrant is defined as any person who moved from one county to another. The movers that I am interested in are those who changed from a farm to a nonfarm residence or vice versa. Of the total movers who moved from farm to nonfarm in the year 1949-50, 1,064,000 stayed in the same county, 439,000

¹This figure refers to the farm population one year old or older at the time the Census was taken. All estimates of movers or migrants refer to the population one year old or over as well. See U.S. Bur. of the Census, U.S. Census of Population: 1950, Vol. IV, Special Reports, Part 4, Chap. C, Population Mobility—Farm-Nonfarm Movers, Table 3.

moved between counties in the same state and 257,000 moved from one state to another (ibid.). Thus of the total of 1,760,000 who moved from a farm to a nonfarm residence, 85 per cent stayed within the same state and 60 per cent within the same county. These data substantiate information from many other sources; namely, that most moves involve relatively short distances.

The data on age distribution and marital status of the movers imply a much greater relative importance of moves by families than at least I had previously assumed. Almost a half (848,000) of the total farmnonfarm movers were married (both sexes); approximately 28 per cent of the movers were thirteen years old or less, implying that they moved as part of a family unit. Furthermore, 104,000 movers (6 per cent of the total) were widowed or divorced. Of all movers aged fourteen or more, only 320,000 (about 18 per cent) were single. (Ibid. Single is here defined to include only persons not ever married.) Thus it appears that about 80 per cent of the total movers were family members rather than the single person in the young adult years.

Of the farm to nonfarm male movers fourteen years and older, almost 22 per cent retained a farm occupation, principally farm laborer (ibid.). The farm to nonfarm migrants—the movers crossing county lines retained a farm occupation to the same degree. The remainder of the movers (as well as the migrants) distributed themselves rather broadly over the spectrum of occupations.2

Several years ago I published an analysis of the experience of farm to nonfarm migrants in the nonfarm job market. This analysis was based on the 1940 Census of Population which collected data from migrants who had moved from one county to another during the period from 1935 until the 1940 census was taken. My objective was that of determining the "labor capacity" of the farm population compared to the nonfarm population. The evidence used to measure the capacity was the income earned by the farm migrants compared to the income earned by the nonfarm population. I found that the occupational distribution of the migrant and nonmigrant groups could be used to provide a rather accurate measure of the median earnings. On the basis of the analysis, after adjustment for age and sex, I concluded that farm migrants had an earning ability about 10 per cent less than urban nonmigrants.

A similar set of calculations were made using the 1949-50 data for the male farm to nonfarm movers and migrants and for the urban and rural nonfarm population. No effort was made to adjust for age, since rough calculations indicated that the difference seemed to be of the

² The data on migrants are from the *Census of Population: 1950*, Vol. IV, *Special Reports*, Part 4, Chap. D, Population Mobility—Characteristics of Migrants, Table.

³ D. Gale Johnson, "Comparability of Labor Capacities of Farm and Nonfarm Labor," *A.E.R.*, June, 1953, pp. 296-313.

TABLE 1 INCOME REFLECTED BY OCCUPATIONAL DISTRIBUTION OF EMPLOYED FARM-NONFARM MOVERS AND MIGRANTS AND NONFARM EMPLOYED, MALE, 1940 AND 1950* (In Dollars per Year)

A. Residence and Year	Farm Migrants	Nonmigrants	Per cent Migrants of Nonmigrants	
All occupations Urban, 1940. Rural nonfarm, 1940. Excluding agricultural occupations Urban, 1940. Rural nonfarm, 1940. All occupations Metropolitan, 1950.	1,115 1,090 2.534	1,260 1,160 1,269 1,237 3,109†	85 83 88 88 88	
Nonmetropolitan, 1950 Nonfarm, 1950 Excluding agricultural occupations Metropolitan, 1950 Nonmetropolitan, 1950	2,475 2,822	2,866‡ 3,054 3,129 3,048	85 81 90 93	
B. Residence and Year	Farm Movers#	Nonfarm	Per cent Movers of Nonfarm Workers	
Urban, 1950	2,487	3,109 2,866	82 85	

^{*} Income data used were median wage and salary income for 1939 and 1950, with incomes less than \$100 excluded. The 1939 data are from the Sixteenth Census, *Population*, Vol. III, *Labor Force*, Part I, Table 72; 1950 data from Bur. of Census, *Current Population Reports*, *Consumer Incomes*, Series P-60, No. 9, Table 25. Income for farm occupations adjusted in 1950.

Occupational distribution data for urban male employed workers.

Occupational distribution data for rural nonfarm employed workers.

Data are for all movers from farm to nonfarm residence; separate breakdown for urban and rural nonfarm movers not available.

N. B. The comparisons do not entirely eliminate the effects of different age distribution on

income. If all of the effects of age were included, the ratio of income of migrants or movers to the nonfarm income would be increased by about 4 or 5 per cent.

Sources: U.S. Bureau of Census, U.S. Census of Population: 1950, Vol. IV, Special Reports, Part 4, Chap. C, Table 3, and Part 4, Chap. D, Table, and D. Gale Johnson, "Comparability of Labor Capacities of Farm and Nonfarm Labor," A.E.R., June, 1953, p. 303.

same order of magnitude as for the earlier period. The calculations involved weighting the occupational distribution by the median wage and salary income for each occupation. The results, as measured by the ratio of the income reflected by the occupational distribution of employed farm movers and migrants and the urban and rural nonfarm population, are given in Table 1.

The results in Table 1 indicate that the data from the 1950 Census give approximately the same results as the data from the 1940 Census. There was only one important difference between the occupational dis-

SOccupations of farm operator and manager and farm laborer, including unpaid family workers, excluded.

tribution of the farm to nonfarm migrants or movers in 1950 compared to 1940. For the later period, a much larger proportion of the migrants or movers retained a farm occupation. For example, of the employed male farm migrants to metropolitan areas in 1949-50, 17.3 per cent had farm occupations, while of the male migrants to urban areas for the period 1935-40, only 5.0 per cent had farm occupations in 1940. It was because of this factor that calculations were made in which farm occupations were excluded for both the migrant and the nonmigrant groups.

The results indicated in Table 1 shed light on a very important point; namely, that farm to urban migrants who are in the labor force do obtain jobs that involve a wide variety of skills and capacities. The migrants and movers do not merely find themselves in the unskilled jobs or even primarily in the operatives category. True, the farm movers or migrants tend to be concentrated more heavily in the laborer and operative category and less frequently in professions, managers and officials, clerical and sales. But the difference in the earnings associated with the occupational distribution of the movers or migrants and that of the nonfarm population is not very great, especially if the movers or migrants retaining a farm occupation are excluded. Nor is the unemployment experience of the farm to nonfarm mover much different from that of the nonfarm to nonfarm mover. In 1950, 8.1 per cent of the farm to nonfarm movers were unemployed at the time the census was taken. compared to 6.6 per cent for the nonfarm to nonfarm movers.4 These data indicate quite clearly that the farm to nonfarm mover or migrant does obtain a job in which he is quite highly productive. In fact, the income differences reflected in Table 1 are about what one would expect from the differences in years of education of the farm to nonfarm mover and the nonfarm population.

The 1950 Census data tell us something about the characteristics of the rather large number of nonfarm to farm movers. In the single year, 1,079,000 persons moved from nonfarm to farm residences. These movers were young, with a median age of 23.8 years—slightly older than the farm to nonfarm movers whose median age was 22.9 years, but substantially younger than the urban and rural nonfarm population as a whole (31.3 years), or the farm population (27.0 years). Such movers were predominately family members—at least 86 per cent. Not all of the movers held farm jobs in 1950; of the employed males, 55 percent had farm jobs as compared to 75 per cent for the employed males in the farm population. The median number of years of school completed by males 25 years old and over was 8.5 compared to 8.2 for the

⁴ U.S. Bur. of the Census, U.S. Census of Population: 1950, Vol. IV, Special Reports, Part IV, Chap. C, Table 3.

⁸ Census of Population: 1950, Vol. IV, Part 4, Chap. C, Table 3.

farm population and 9.5 for the urban and rural nonfarm population. What these data do not tell us is why. Why is there such a large return movement to the farm each year? Are the nonfarm to farm movers primarly persons who had previously moved from farm to nonfarm areas and were returning to the farm because of dissatisfaction with some aspect of nonfarm life? The relatively low educational achievement implies that this might have been the case, though such a statement can only be a rough inference.

To summarize the above data, we find that most moves are for relatively short distance, though the amount of interstate movement of farm to nonfarm movers amounted to about 150,000 in the year 1949-50. A much larger proportion of the movers were family members than at least I had assumed to be the case. The assumption that most moves from farm to nonfarm are made by young and single persons is not borne out by these data. The farm to nonfarm migrants obtained jobs, both those who moved between 1935 and 1940 and in 1949-50, that ranged in income from 85 to 90 per cent of the earnings of the nonfarm population of the same age and sex. The data from the 1950 Census told us very little about the nonfarm to farm mover, except that such movers were primarly family members and most may have formerly been farm residents.

II. Policy Proposals

The possibilities of increasing the rate of migration from farm to nonfarm areas are numerous. As is evident from the data presented above, we start with a population that is highly mobile. The large rate of transfer of labor, though admittedly inadequate, has occurred in a market situation that exhibits many imperfections. I do not speak here of monopolistic or monopsonistic imperfections. While these may have some effect, I believe that they are minor compared to the other imperfections. The imperfections consist of lack of accurate knowledge concerning alternative opportunities, the difficulty of achieving standardization of the labor service, and the differences in the mode of life in rural and urban areas. The task or objective does not seem to be an insurmountable one. If the rate of annual migration is increased by 60 per cent, the annual rate of reduction of the farm population and of the farm labor force would be approximately double that of the past decade. This is true because the natural rate of increase of the farm population would remain stable or possibly decline due to the change in the age distribution of the farm population.

This is essentially the short-run task, say for a period of a decade. The longer run task is to create conditions that will increase the productivity of the rural farm population and to increase its sensitivity to and willingness to accept alternatives that offer only slightly larger pecuniary and nonpecuniary returns.

There are three quite obvious programs that could be instituted to improve the labor transfer process. These might be labeled, for brevity, as information, assistance, and educational improvement in rural areas, especially at the primary and secondary levels. I shall comment on the first two only briefly since I have discussed them in some detail elsewhere. 6 We know from a number of studies that most of the information concerning nonfarm job opportunities is obtained from friends and relatives. Public sources of information, such as newspapers and employment agencies, either public or private, have played a relatively minor role. As Fuller has pointed out, the public employment services as now organized have not and probably cannot perform a very useful role in helping farm people transfer to nonfarm employment. (Fuller, op.cit., pages 370-72.) The employment services are basically local in their scope and function primarily within a single labor market. The service that they perform is primarily that of finding workers for whatever job openings have been reported to them, and most job openings are not reported to the agencies.

The information that most farm people would find most valuable is not that concerning immediate job openings, important as that may be. Apparently farm migrants are reasonably successful in obtaining jobs. The information that might be of most value in improving the labor transfer process would concern career opportunities and the problems of adjusting to a nonfarm environment. In the United States we have an active agriculture extension service that includes educational and advisory activities relative to the farm and the home. Advisory services are being developed to serve the needs of the urban housewife. On the whole, these activities have made a worth-while contribution to agricultural efficiency and to improving at least the material aspects of home life. Since labor is the most important single resource of our nation, it seems appropriate that a national labor extension service, organized along lines similar to the agricultural extension service, be developed. It should not be primarily a service for agricultural people; the problems faced by farm people are little different in kind or degree than those faced by nonfarm persons. Its function should be that of bringing information to all interested persons concerning career opportunities including such aspects as earnings, training required, sources of information concerning job openings, how to apply for jobs, the nature of the work performed or required, the major locations of jobs in the

⁶ D. Gale Johnson, "Policies and Procedures to Facilitate Desirable Shifts of Manpower," J. of Farm Econ., Nov., 1951, pp. 727-29. See, also, Varden Fuller, "Opportunities and Limitation of Employment Services and Other Information Aids," in Problems and Policies of American Agriculture (Iowa State Univ. Center for Agric. Adj.), pp. 350-87.

various careers, and related types of information. The activities of such a service should be primarily educational or informational, in my opinion.

Many types of assistance could be provided that improve the transfer of labor. The assistance provided should be judged by two criteria: increasing the flow and reducing the number of mistakes. Much migration from farms to nonfarm areas may be rather aimless, as indicated by the relatively large reverse flow. The types of assistance that might be offered include job counseling, job training, placement, location of housing, loans to finance moving or outright grants. If done on a sufficient scale, in good spirit and with an honest effort to serve, the first three activities might prove adequate. The provision of loans to finance the costs of movement might be tried out in lower income agricultural areas. Grants or subsidies certainly should not be ruled out, but difficulties with respect to equity and administration might well argue that such a device should only be used as a last resort or if very rapid adjustment were deemed necessary.

As a long-run measure I would place a great deal of emphasis upon improving primary and secondary education in farm areas. The very limited educational achievement of the farm to nonfarm migrants or movers can be considered little short of a national disgrace. Of the white migrants twenty-five to thirty-four years old, 8.5 per cent had less than five years of schooling and 35.2 per cent had five to eight years of schooling. Of the nonwhite migrants in the same age group, 30.8 per cent had less than five years and 43.8 had five to eight years of schooling.7 The same data for the entire farm population is not strikingly different, except that 37 per cent of the nonwhites twenty-five to thirtyfour years of age have less than five years of schooling. In contrast, in the white urban population, for the same age group, only 2.3 per cent have less than five years and 16.1 per cent have five to eight years. For the nonwhites the percentages are 11.6 and 36.8. In both cases significant proportions of the inadequately educated must have migrated from farm areas.

The inadequate education of the farm to nonfarm migrants or movers is primarily a result of the educational situation in the rural South for the past several decades. Approximately one-half of the farm population resides in the South. For the farm population of twenty-five years or older, 20.3 per cent of the whites and 53.0 per cent of the nonwhites have

Tu.S. Census of Population: 1950, Vol. IV, Special Reports, Part 4, Chap. D, Table. The data for movers from farm to nonfarm areas are not available by sex, race, or age. If the data for persons twenty-five years or older are compared, a somewhat larger proportion of the movers have limited amounts of education. Less than five years: movers 18.3 per cent; migrants 16.8 per cent; five to eight years: movers 43.2 per cent; migrants 43.1 per cent. U.S. Census of Population: 1950, Vol. IV, Special Reports, Part 4, Chap. C, Table 3.

less than five years of schooling. In the North Central Region, the other major agricultural region, 6.7 per cent of the farm population has less than five years of schooling. However, the percentage of the farm population with less than a high school education is very high in rural farm areas in the North Central Region, amounting to 62.9 per cent compared to 41.7 per cent for whites in all U.S. urban areas. In southern urban areas 37.8 per cent of the whites twenty-five and over have less than a high school education, which is actually lower than the percentage of whites with less than a high school education in the urban areas of the North Central Region (42.0 per cent). However, 73.1 percent of the urban nonwhites in the South have less than a high school education and almost 33 per cent have less than five years of schooling.

The major effects of more and better quality primary and secondary education in farm areas as it affects labor mobility are two. First, the range of opportunities available to the farm migrants would be increased and in some cases by significant magnitude. Second, the acceptability of farm migrants in urban communities would be enhanced and the ability of the farm families to adapt to urban condition would be improved. But even if there were no relation between education and the rate of mobility, improvement of education in rural areas would be desirable, assuming that the present investment in education in urban areas is not excessive, since at least a half of all persons educated in rural farm areas reside in nonfarm communities for most of their productive years.

But to argue that it would be advantageous to increase investment in education in rural areas, especially in the South, is one thing; to indicate what measures would accomplish this within the next few years is quite another. Part of the limited education of rural whites is due to the values held by the farm population, but perhaps the more important factor is the limited economic base, calculated per pupil, of the areas involved. Additional investment in the education of Negroes would probably occur if Negro families placed greater emphasis upon education. As inadequate as educational facilities for Negroes in many southern areas may be, I am reasonably confident that eight years of schooling is available to most Negro youngsters living on farms. And the proportion of Negro rural farm youth that could avail themselves of

⁸ There is evidence that educational attainment in rural farm areas was closer to that of urban areas four or five decades ago than it is today. Direct data are not available, but males aged sixty to sixty-four in 1950 had a median of 8.0 years of school completed in farm areas and 8.5 in urban areas, while males aged twenty-five to twenty-nine had completed 9.5 years in rural farm areas and 12.3 in urban areas. The above data refer to whites. In the case of nonwhites, the median years of school completed were 3.8 and 5.6 for farm areas and 5.6 and 9.2 for urban areas. In the case of whites the increased differential cannot be explained by regional changes in population distribution, while some may be so explained in the case of nonwhites.

high school education is apparently significantly greater than the proportion that does, since approximately two-thirds more females than males attend at least one year of high school. There are undoubtedly economic reasons for the greater high school attendance rate for females than males, but it is likely that attitudes and beliefs about the value of education are involved.

As a limited measure, the agricultural extension service might undertake, perhaps only on a trial basis, educational activities on the value of education in an effort to increase the proportion of rural youth that continue through the primary and secondary schools. Certainly much more might be done within the schools themselves.

But it seems clear that more money must be spent on schools in rural areas if there it to be substantial improvement in the educational attainment of farm youth. Several of the southern states undoubtedly could increase their expenditures if there were the will to do so, but there is little question that federal aid would result in achieving improvement on a much more adequate scale and within a more limited span of time. But at the present juncture of American history, there is little likelihood that federal aid for primary and secondary education could be made politically acceptable. The United States is now paying the price, and will continue to do so in the future, for a half century of failure to enforce the Supreme Court decision on the maintenance of "separate but equal" educational opportunities for Negroes; no matter how unequal "separate but equal" might have been, it certainly would have been much more equal than "separate but unequal."

I wish to make note of two more points. First, it is more than anomalous that at a time that there is general agreement that it is necessary to reduce our agricultural labor force that we continue to enter into arrangements for the employment of foreign labor. Most of this labor consists of Mexican nationals and the program represents a continuation of a wartime emergency measure. There is simply no excuse for continuing programs encouraging the employment of foreign nationals in our agriculture. It is true that to stop the flow now would increase product prices in some cases and lower land values almost everywhere a significant number of such workers were employed. Wage rates for domestic workers would also rise and there would undoubtedly be some substitution of capital for labor, but on balance U.S. agricultural output would fall.

Second, as noted earlier, most farm to nonfarm moves are for relatively short distances. This would imply that if it were possible to locate new nonfarm job opportunities in or near farm communities that the transfer of labor out of agriculture would occur at a more rapid rate than if the new job opportunities were created in the existing major

industrial centers. Between April, 1950, and April, 1958, there was an increase in the percentage of the labor force living on farms with non-agricultural jobs from 29.4 to 38.4.9 However, the increase in the absolute number of workers living on farms with nonagricultural jobs was only 200,000. Undoubtedly, the location of nonagricultural opportunities close enough to farm residences to permit a change of occupation without a change in residence was more important than that indicated, since if farming operations cease entirely for a family, its residence is reclassified from farm to nonfarm.

Vernon Ruttan has recently indicated on the basis of trends for the period 1947-54 that there is no evidence that employment opportunities in manufacturing are shifting to smaller cities and towns. In fact, he believes that in the southeast the trend will be in the opposite direction; that as the relative employment in textiles and lumber declines, larger cities in the southeast will have a greater share of the total employment in that region. Ruttan also argues that the low-income areas in agriculture do not have resource advantages, other than labor, or location advantages to attract nonfarm job opportunities.¹⁰

Local co-operation and informational activities designed to attract nonfarm employment in rural communities, such as have occurred in the Rural Development Counties, are certainly to be encouraged. But there is little likelihood, even with provision of low-cost capital and forgiveness of local property taxes, that such efforts will have much effect on location of nonfarm job opportunities. While the payment of subsidies could have an influence on industrial location, it would appear to be cheaper in the long run to induce people to move where the job opportunities are rather than vice versa.

⁹ U.S. Dept. of Com. and Agric., Farm Population, Series Census—AMS (P-27), No. 25,

p. 2.

10 Vernon W. Ruttan, "The Potential in Rural Industrialization and Local Economic Development," in Agricultural Adjustment Problems in a Growing Economy (Iowa State Col. Press, 1958), pp. 185-97.

DISCUSSION

EARL O. HEADY: Professor Maddox has performed a useful service in bringing together some of the private costs involved in movement of farm people out of agriculture. Too, he has provided a good summary of some of the major secondary or social costs involved in migration.

The figures he quotes on private costs of migration are indeed low. They alone would keep only a small portion of potential migrants from leaving agriculture. Few individuals would be prohibited from occupational and geographic migration at costs of \$100 or less for transportation and subsistence costs over the transition period from terminating farm employment to receiving their first pay check in industry. He considers that the private costs are not a serious impediment to migration or a great burden on the people who move. But obviously, these figures apply best to one stratum of actual or potential migrants; namely, youth entering the labor force or only recently beyond this life stage. Given the relative degree of economic stability and abundance of employment opportunities in the postwar years, private costs have been unimportant relative to lack of training, vocational guidance, and employment information in retarding migration for this stratum. But certainly these costs are several times greater and much more an obstacle to migration of the distances which Maddox analyzes for other strata of potential migrants. This is true for farm laborers who must move their family and household assets to a new location, who previously had their living quarters furnished in agricultural employment and who must provide subsistence not only for themselves but also for their family. It is true for farm operators with families, who also have real incomes lower than those provided by alternative employment opportunities at some distance. Too, the latter group often experiences some important loss in income as it goes through a period of liquidating farm assets and terminating operations. Finally, not all migrants obtain employment on the day they arrive at a distant location.

Other private and social costs also should be mentioned, even for the first group. They grow out of the voids with which we surround the human resources of agriculture in respect to guidance and employment services. These voids give rise to "false starts" and the private costs associated with them, meaning that a migrant does not always "hook up" with a job that meshes with his skills, abilities, and preferences. Consequently, he often starts over again, frequently returning to his old location before he takes off in a new direction or for further job prospecting. In this respect, the "opportunity social costs" of our failure to better guide people to the locations and occupations appropriate to the production possibilities that represent their abilities and consumer demand under economic growth are perhaps even more important. We have provided these services for other less important commodities and resources of the farm industry. Why haven't agriculturists, especially economists, invested the same energy in respect to the labor commodity or resource? Probably because there is no organized pressure group coming to the land-grant colleges

or the USDA to bend and influence their interests accordingly. On the side of predicting production possibilities of a resource, economists and other agriculturists have established and refined grading of crops and livestock. These predict the production possibilities of the resource, indicating the proportions of cereal products which can be produced from wheat or the fat and meat products which can be produced from livestock. We have not invested similar energy in helping to predict the production possibilities making up a farm person, so that he has equal guidance. Going further, on the price side, agricultural economists have become quite sophisticated in outlook. A calf, if he could read the college outlook release, could read predictions of his worth at Kansas City next spring, or, if he hides out long enough, the possible value of his offspring in the phase of the cattle cycle four years hence. We provide current market quotations for other resources of agriculture. A sow, if she could read the newspaper, could determine her tomorrow's worth at Chicago or Sioux City in the transformation to lard and pork chops. But we do not provide or emphasize the same services for people in agriculture even though they not only can transform their energies and abilities into nonfarm products used by other consumers but also are themselves consumers. As consumers, many of them could better enjoy life under economic growth if we provided them the same grading and outlook (vocational guidance and job information) services that we provide hogs and cattle. This private opportunity cost cannot be overcome until we do so.

The uncertainty surrounding long-distance migration also must be brought in as part of the financial considerations facing the individual. In other areas of decision making, uncertainty has been given an important role in costreturns calculus and strategy. Many farm persons must be prevented from moving because of uncertainty in job location, skill requirements, living conditions, time before first pay check, personal adaptations to city living and others. Because of these uncertainties, families generally must have a nest egg considerably greater than enough funds for transportation, meals and room over a ten-day period.

Maddox properly emphasizes the costs to communities of widespread migration. Obviously, and as he suggests, these costs even now prevent us from structuring existing action programs to the needs under economic growth. For example, the pressure of local communities to hold on to population for purposes of financing public services and maintaining the value of assets invested in nonfarm businesses has prevented a more concentrated withdrawal of land and people (in areas of low comparative advantage and high production costs where greatest adjustment may be required) under the soil bank. Too, our public educational institutions (extension services in particular) perhaps could provide more of the guidance farm people need in migrating to nonfarm employment if these social costs were not so great. Because they exist, educational programs which help guide adjustment and migration are not popular among the nonfarm groups and organizations in rural communities. These social costs are as important as those falling directly on farm people resulting from technological advance and the decline in demand for the services of labor on farm land in many areas. The effect of advancing farm technology

also is a decline in demand for capital and human services in nonfarm activities in these same locations. Society evidently has provided compensation for farm people through direct payments and support prices, to redress reduction in income and losses in asset values resulting from rapid technological advance. Is there any unique reason why nonfarm people should not also be compensated to cover losses resulting directly from migration of farm people but fundamentally from farm technological advance? If these nonfarm secondary costs of rapid technical advance in agriculture were as readily recognized as those falling on farmers, we could structure our public policies more appropriately. They could be better geared to meshing the structure of agriculture and the communities and institutions which service it with the major growth trends of the national economy. Through greater federal aid to schools and other mechanisms which recognize differential economic growth opportunities among regions and communities, including the fact that some must decline while others expand, we could remove major portions of the tax burden causing communities to resist adjustment and migration. Other services also could be provided to facilitate migration and to lessen both the private and social consequences. Provided especially would be broadened services in vocational training and occupational guidance to facilitate orderly and systematic migration of both farm and nonfarm people from declining communities.

MELVIN W. REDER: It was to be expected that Gale Johnson would write an interesting and thoughtful paper, and he has not disappointed. An important shortcoming, from a discussant's point of view, is that it gives so little to criticize. Were it not for the implicit rules of the game, I would be tempted to say Amen, and relinquish the floor. But since I do not have sufficient courage for this, I shall have to attempt some sort of criticism.

In discussing a paper of this kind, there is no point to fussing with the details, especially since Johnson handles them so well. Let me therefore raise a rather fundamental question: On what basis is it contended that the rate of farm-nonfarm migration since 1940 has been less than optimal? It is one thing to argue that the marginal product of labor (of given capacity) is less in farm than in nonfarm employment; it is another to contend that the rate of movement from the former to the latter is "too slow," especially when that rate of movement is as rapid as Johnson has indicated. (I take it for granted that the movement of farm labor to urban locations could be too great.)

Let us consider the following possibility: In each year, each "grade" of farm labor moves to nonfarm situations at about the rate that equalizes net advantage at the margin of transfer. This equilibrium is short run. In each succeeding year, a new cohort of farm youths reaches the age of movement and migration continues, with a steady distribution of the population between farm and nonfarm occupations being delayed indefinitely.¹

This hypothesis is not inconsistent with the data in Table 1. The farm migrants to whom the income data refer include a wide range of labor capacities.

¹I have discussed this model elsewhere: "Wages in Theory and Practice," in *A Decade of Industrial Relations Research*, 1946-1956, edited by N. W. Chamberlain, F. C. Pierson, and T. Wolfson (Harper & Bros., 1958), pp. 78-80.

What we need for the issue at hand are the ratios of nonfarm earnings of migrants to potential (perhaps indicated by previous) farm earnings. These data are not, so far as I know, available. However, the large stream of reverse (i.e., city to farm) migration to which Johnson calls attention is at least suggestive of the possibility that some farm migrants earn no locational rent in urban jobs. There are also other straws to suggest that there is the dissatisfaction at the margin that would betoken rough equalization of net advantages. Now, I do not wish to push this line of argument too hard. I do not know that it is true, and the fact that Gale Johnson apparently rejects it is no small piece of evidence for the opposite view. However, there is a lacuna in his argument that requires filling.

It should be stressed that Johnson's policy recommendations are quite independent of the above argument. The case for increasing farmers' knowledge of job openings and career opportunities is independent of whether it would result in more or less migration—and it is a good case. The argument for improving rural education is an even stronger one; and I concur fully in Johnson's arguments on both counts.

GEORGE P. SHULTZ: My comments are of three types: A statement in general terms about Hathaway's main thesis, questions about particular points which are either unclear to me or with which I disagree, and comments about the observations on public policy with which Hathaway concludes.

As I understand his thesis, it is this: The historical record shows great migration from agriculture but this migration has not solved the problems of agriculture. Indeed, it has created some problems of its own. To these he directs our attention.

He clearly does not leave the implication that this migration has been bad for the economy but I do think that the positive side of the coin deserves emphasis, especially since the balance of our view will be reflected in the public policies we advocate. Let me try to make my point by restating in oversimplified fashion some of the historical record that Hathaway presents.

Large income differentials between agricultural and nonagricultural employment have induced large-scale transfers of labor from agriculture. Without this transfer the allocation of labor resources in the economy would be worse than it now is and the economy as a whole less productive. Even the sweeping transfers that we have seen have not kept pace with the economic changes that called them forth. Nevertheless, the problems remaining are less serious than they might otherwise have been. This broad economic process has also operated with reasonable selectivity. The lowest income areas have produced the most migration. The least productive farms have been eliminated on a wide scale. More nonfarm work opportunities have appeared in rural areas. In general, then, we can say that the historical record shows a generally desirable movement of people from agricultural to nonagricultural employment. The per-

² For example, E. D. Smith, "Non-farm Employment Information for Rural People," J. Farm Econ., Vol. 38, pp. 813-27, especially p. 820, found, in a study of rural migrants to Indianapolis, that 44 per cent were dissatisfied to the extent that they were "hoping or actively planning to return to farming."

sistence of income differentials shows that further movement is necessary and desirable. All of this is not to neglect Hathaway's point that migration alone is not enough or to ignore a problem that is as present in the field of labor economics as it is here; that is, the problem of easing the burdens of the transfer process on those who must do the transferring. I shall say more about this in a moment.

Let me now move on to four points that are not clear to me.

1. Professor Hathaway is careful to keep his figures on income for the farm population pure of any of that corrupt money that farmers might have earned on nonfarm jobs, and he states "earnings from outside agriculture do not enter into the question of whether the agricultural industry is producing a relatively higher level of income after a period of heavy out-migration." I do not understand this point. When we are talking about income differentials as they may be related to migration, it seems to me it is the total income that counts. Presumably a man asks himself, "If I undertake the social and economic costs of movement for me and my family, will my income be greater in the new location and job than it is where I am?" Unless there is strong evidence to show that farmers do not consider nonfarm income when they make a decision to move, it would seem artificial to me to make this distinction.

As an incidental matter, putting the question as I have would seem to go some distance toward explaining why older farmers are less likely to move than younger ones who have more years ahead of them over which to spread the cost incurred. The predominance of younger workers among migrants is as true within the nonagricultural labor force as it is between agricultural and nonagricultural employment.

- 2. Evidence is presented to show that the number of low-production farms has declined very sharply while the number of commercial farms has been stable since 1929. This fact is offered as a reason why out-migration has not resulted in significant reductions in income differentials within agriculture and between agricultural and nonagricultural employment. Again, I simply do not understand the line of reasoning here. Does not the elimination of the lowest end of a distribution automatically reduce the range within the distribution?
- 3. The point is made that migration means a capital transfer estimated at 35 billion dollars for the 1940-50 decade and reflecting costs incurred by the agricultral sector in the rearing and schooling of children. I hope this figure is not picked up by the farm lobby. Surely it is not some sort of net estimate. Many rural educational systems are supported in part by urban incomes and, even leaving aside the magnificent subsidies provided by the farm price support program, urban incomes provide roads, electricity, markets, and so on for farmers.
- 4. The point is made that migration makes difficult the reorganization of farming operations since the older farmers are the ones who are left. Older farmers, apparently, are "set" in their ways. This is an interesting addition to our lore about old dogs and new tricks. As an outsider, however, I must confess surprise, for I have had the impression that output per man-hour in

agriculture has been rising sharply in the post-World War II period. And this rise is not a "statistical freak" but reflects widespread use on commercial farms of new technology and new knowledge about farming. How does one reconcile the productivity figures with the observation that "most of the people capable of making such adjustments [new technology and so on] may be among the out-migrants"?

Finally, let me comment on the policy questions raised in the paper. First of all, as one who advocates measures to ease the pains of transition for nonagricultural workers affected adversely by technological change, I must agree with Professor Hathaway's call for "public policies to cope with the social and economic problems attendant to migration." But what are these policies? Certainly improvements in rural education, job information, and human mobility must be among them. Judging from some of Professor Hathaway's data, the development of nonfarm work opportunities in rural areas is worth encouraging. Certainly housing and general community problems in urban areas resulting from in-migration of nonwhites need no emphasis to a man who lives on Chicago's south side. But, if I may return to my original interpretation of the record on migration, it seems to me essential to design our policies in such a way as to facilitate and ease migration rather than to slow it up or cut it off. We must, in other words, seek those solutions to short-run problems of adjustment that impair as little as possible the basic long-run developments upon which we depend.

REDUCING IMPEDIMENTS TO FOREIGN TRADE

EMPLOYMENT EFFECTS OF UNITED STATES IMPORT LIBERALIZATION*

By Walter S. Salant Brookings Institution

The year 1959 marked the twenty-fifth anniversary of the United States Reciprocal Trade Agreements program, under which Congress has authorized the President to negotiate reciprocal reductions of tariffs. Since 1934, when Congress first passed the Trade Agreements Act, it has granted this power for very short periods of time. It has extended the power eleven times and only the last extension, passed in 1958, was for as long as four years. By refusing to grant tariff-reducing authority for longer periods, and even more by inserting in the Act the peril point, escape clause, and other protective provisions, Congress has made clear its intention that the power should be used in a way that avoids serious adverse effects on American businesses and employees.

The various administrations have concurred in this intent. Indeed, the Act was proposed by the Roosevelt Administration as an antidepression measure; it was intended to expand foreign markets for American exports, while permitting greater imports into the United States. The original preamble stating this purpose remains unchanged. The classical argument that liberalized trade would in the long run bring about a more efficient allocation of resources and higher real income, which to most economists is the intellectual basis of the policy, not only has been unpersuasive to opponents of the policy but has been little used as argument by its supporters, either because they have thought it unconvincing to others or because they have found it unconvincing themselves.

The arguments used in public support of trade liberalization in this country have shifted with the times. In the first decade after World War II, this support was based to a large degree on the dollar difficulties of the rest of the world and the belief that if we increased our imports the rest of the world would need less of our aid. Even then, opposition to import liberalization was persistent and vigorous and the effectiveness of the program was always in some danger. Increasingly,

^{*}The paper summarizes some of the results of research that has been recently completed at the Brookings Institution and that will be published in the coming year. From the beginning of this work I have had the collaboration of Mrs. Beatrice Vaccara. She is a coauthor of the study, although she is not responsible for the presentation of its results in this paper.

the program has been hedged with means of escaping from the concessions granted and with other restrictions. Now, under the last Extension Act, the President is authorized to raise duties in escape clause cases to 50 per cent above the rates in effect on July 1, 1934, and to impose duties of up to 50 per cent on imports that are free of duty under other legislation.

With the United States balance-of-payments deficit now in the fore-front of public attention and likely to persist for several years, the argument that increased United States imports provide a needed addition to foreign dollar earnings, or are needed before aid can be reduced, is unlikely to have much force, and the import liberalization program—if, indeed, we can still speak of one—may be in great danger, despite the fact that opportunities to get reciprocal reductions from other countries will be greater than at any time since the war.

This will be the more true if the balance-of-payments deficit persists and if, in an effort to induce foreigners to leave their funds here rather than withdraw gold, we keep interest rates high and restrain our rate of domestic economic growth while increases in both output per manhour and the labor force continue, so that it becomes more difficult to maintain maximum employment. Then our concern with the balance of payments and with unemployment could combine to create pressure for converting legislation originally intended to reduce tariffs into machinery for increasing them.

In this situation, it is especially important to assess as correctly as possible the impact of import liberalization on domestic employment.

It need hardly be said to this audience that the effects of import liberalization on employment are not a good criterion for determining the level of import barriers that should be maintained in the long run. The reason is not that the level of employment is unimportant but merely that in the long run the level of import barriers need not, under appropriate policies, affect it.

It is true, nevertheless, that changes in import barriers affect the total demand for labor in the short run. A society which accepts the idea that the welfare of individuals is a legitimate concern of government cannot, consistently with this acceptance, ignore the transitional injury that results from government action. Such injury is a cost of attaining the benefits expected from these changes. The short-run employment effects of reducing import barriers are therefore relevant to decisions about changing them and, when such changes are found desirable, to decisions about how they should be made.

These effects are the concern of this paper. The first part of the paper presents the high lights of the estimates of various employment effects. The second part discusses their policy significance briefly and compares

the results with other employment changes in order to put the estimated employment effects of import liberalization in perspective.

I. Summary of the Estimates of Employment Effects per Million-Dollar Shift of Demand

The estimates which I shall summarize here are intended to represent the short-run effects on domestic employment of unilateral reductions of United States import barriers. They are expressed as numbers of employees per million-dollar increase of imports. Thus they are coefficients relating employment effects to import increases, not absolute employment effects of any specified program of tariff reductions. The million-dollar increase of imports to which the employment effects are related is a valuation in 1953 prices at domestic ports, after payment of United States tariff duties. The employment effects are those which could be expected to result when that increase of imports is caused by a million-dollar shift of buying from domestic to imported products. They do not include the secondary effects of income-induced changes in domestic spending.

Estimates were made for such shifts of spending on the products of each of 72 industries, taken separately. These industries were selected because they had a significant degree of protection in 1953¹ and because they passed certain other tests which gave us reason to believe that the employment effects could be reliably estimated.

The estimates made use of the interindustry relations study of the Bureau of Labor Statistics for 1947, so that they yield not only the effect of the initial output change on employment in all industries but its distribution among the 200 industries into which, in that study, the economy was divided.

For each of the 72 industries whose liberalization is analyzed, three types of employment effect were estimated. The first, which we call the gross decrease of domestic employment, results from the decrease in expenditure on domestic output. The estimates of this effect in all industries in each of the 72 cases, and of its distribution between the liberalized industry and the 199 other industries combined, have already been published in a paper that appeared in the supplement to the *Review of Economics and Statistics* for February, 1958.

The other two employment effects, estimates of which have not been presented before, are employment increases associated with a shift in spending from domestic to imported products. The first is the gross primary increase of employment associated with the shipping of the addi-

[&]quot;Significant" tariff protection was defined to mean average duties with an ad valorem equivalent of 5 per cent or more. If the average ad valorem equivalent was not more than 10 per cent, however, the definition also required that the 1953 imports had to be 1 million dollars or more. Restrictive import quotas were also regarded as "significant protection."

tional imports. Although this effect is generally very small in relation to the gross primary decrease, it cannot be neglected.

The second is the employment increase associated with the increase of exports that results from the increase in imports and with the shipment of these additional exports. Because this effect is substantial and because estimates of it are being presented here for the first time, something needs to be said about the general method of estimating it.

Since each million-dollar increase of imports represents a valuation at domestic ports, it does not give rise to a million-dollar increase of foreign dollar earnings. It was first necessary to distribute the million-dollar increase in the domestic value of the liberalized imports between the United States share and the foreign share. (The foreign share consists of the foreign port value of the increase in imports and the foreign share of the cost of shipping it.) This gross increase in the dollar earnings of all foreign countries was then distributed among the individual foreign countries that supply the additional imports.

The next step was to estimate how each major supplier would use the addition to its foreign dollar earnings. In the light of each country's known past behavior and its probable future behavior and policies, a judgment was formed as to what proportion of its gross increase in dollar earnings it would spend on merchandise imports and on shipment of them. (This proportion is called its "merchandise reflection ratio.") The resulting increases in its imports are assumed to come from the United States and from the rest of the world in the same proportions as its total merchandise imports in 1953. The portion bought outside the United States gives rise to increases in the earnings of other countries and thus to increases in their incomes and imports, including their imports from the United States.

To estimate the total of these multilateral increases in foreign imports from the United States, foreign countries were divided into four world trade groups, according to whether the merchandise reflection ratios assigned to them were above or below a selected ratio and whether the percentage of their total imports that came from the United States was "high" or "low" in 1953. The portion of each major supplier's increase in merchandise imports that was not obtained from the United States was allocated to these four world trade groups to estimate the initial gross increases in the export incomes of these groups.

These gross increases are partially offset, however, by the loss of export earnings resulting from the decreases in United States imports that are induced by the reductions in output of the goods whose protection is cut. These decreases, too, were distributed among the four world trade groups and were then subtracted from the gross increases

in their earnings from major suppliers to get the initial net increase in the export earnings of each group.

This initial net increase in the earnings of each world trade group is assumed to give rise to increases in its imports from each of the four groups and the United States. The increases in the exports of all groups (but not those of the United States) are assumed to give rise to an infinite although diminishing series of further increases in trade with each other and in imports from the United States. The sum of all these successive increases in imports from the United States for all four groups constitutes the multilateral increase in United States exports of merchandise and associated shipping services.

From this part of the estimating process there emerges an implied relation between export increases and net increases in foreign dollar earnings, which turns out to vary greatly among the different cases.

The total increase of United States exports resulting from the assumed million-dollar shifts of American spending in each of the 72 cases was then distributed among the various United States industries. Thus, for each case, an estimate was obtained of the increase in foreign spending on the products of every United States industry. In all 72 cases, the increases in exports are assumed to come from a wide range of American industries, but their composition differs from case to case and depends upon which countries are the major suppliers of the liberalized imports. The effects of these export increases on domestic output and thence on employment in every United States industry were then estimated in the same way that the primary employment effects of liberalization were estimated; i.e., output effects were derived by applying the inverse coefficients of the BLS interindustry relations study and were then converted into equivalent employment.

As this summary explanation makes clear, the procedure for estimating employment effects of exports requires making specific assumptions about how great an addition to earnings would accrue to supplying countries from a million-dollar increase of imports (valued at domestic ports after payment of duty), how much of their additional earnings supplying countries would spend in the United States and how much they would spend in other countries, how much of their own additional earnings these other countries would spend in the United States and elsewhere, and how the total increase in United States exports would be distributed among different industries. Underlying the whole procedure is the implication that the increases in exports to the United States are not made at the expense of exports to other countries or of domestic use of goods and services in the supplying countries.

Since all three employment effects, as well as their industry distribu-

tions, were estimated separately for each of 72 single-industry liberalizations. I can here only summarize the characteristics of their frequency distribution. The main results are shown in the accompanying table. It should be noted that the figures for employment represent changes per million-dollar increase of imports, measured in 1953 domestic prices:

1. The gross decreases of employment resulting from the decrease of domestic output have a median value of 115 employees per million-

EMPLOYMENT EFFECTS OF SINGLE-INDUSTRY IMPORT LIBERALIZATIONS: SELECTED Points in Distribution Among 72 Cases

(Employment Figures Represent Numbers of Employees* per Million-dollar Increase of Imports Valued at 1953 Domestic Ports after Payment of Duties)

Line Number	Type of Employment Effect	Mini- mum	First Quar- tile	Median	Third Quar- tile	Maxi- mum
1 2 3	Gross decrease: In all industries. In liberalized industry. Per cent in liberalized in-	51 17	94 43	115 63	135 84	224 194
	dustry	23%	45%	57%	67%	86%
4	Gross increase associated with shipping of imports	0	+	1	2	24‡
5	Gross increase associated with	Ů	'	_	_	
,	increase of exports, all in- dustries	8	20	26	50	70
6	Total gross increase, all indus-	9	21	27	52	78
7	As per cent of gross decrease	9%	16%	26%	47%	110%
Q	Net decrease: In all industries	_58	57	86	103	175
8 9	In liberalized industry	-5§ 17	43	62	84	192
10	Addendum: Export increase as					
	percentage of net increase in foreign dollar earnings	13%	25%	30%	53%	81%

^{*} Employees include farmers and unpaid farm family workers.

Note: Estimates do not include employment effects of income-induced changes in domestic spending.

dollar increase of imports. The dispersion among the cases is wide. The lowest decrease is 51 employees (for liberalization of grain mill products); the highest is 224 employees (for liberalization of vegetables and fruits). The wide range is attributable largely to extremely high displacement in a few cases. The table shows that in three-quarters of the 72 cases the gross displacement is less than 135 employees. (It exceeds 139 employees in only 11 cases.)

The percentages of this gross decrease that occur in the liberalized industries have a median value of 57 per cent. This percentage has a wide range—between 23 per cent in the case of liberalization of the

Less than 0.5 employees.

This figure is not regarded as reliable. † This figu § Increase

meatpacking and wholesale poultry industry and 86 per cent for liberalization of vegetables and fruits.

Although these estimates assume that the increase of imports displaces an equal 1953 value of similar domestic output, they can be adjusted to alternative assumptions about displacement by a simple scalar adjustment.

- 2. The gross increases of domestic employment associated with shipping the additional liberalized imports have a median value of only one employee per million-dollar increase of imports.
- 3. The employment stimulus from the increase of exports is substantial, but under the assumptions made in the study it is considerably smaller than the displacement resulting from the decrease in domestic sales. It has a median value of 26 employees and ranges from a low of only 8 employees to a high of 70.

The increases in United States exports implied by the assumptions underlying these estimates vary greatly among the 72 cases. Generally, they are very low. In half of the cases exports increase by less than 30 cents per dollar of the net increases in foreign dollar earnings that induce them and in three-quarters of the cases they increase by less than 53 cents per dollar. The technique permits anyone who prefers to assume larger increases in United States exports per dollar of increase in foreign earnings to substitute the ratio he prefers and to revise the estimates accordingly.

- 4. The total of these two gross employment increases has a median value of 27 employees, a minimum of 9, and a maximum of 78.
- 5. The median net change in employment, obtained by substracting the two gross increases from the gross decrease, is a decrease of 86 employees. The largest net decrease of employment is 175 employees per million-dollar increase of imports. In only two of the 72 cases—liberalization of grain mill products and of sugar—do the combined gross increases outweigh the decreases due to the decline of domestic output, so that employment increases on balance. The larger of these two net increases is only 5 employees.
- 6. If we consider the percentage of the gross decrease of employment in all industries that is offset in each case by increases, we find that the median percentage is 26 and that in three-quarters of the cases the offsetting increase is 47 per cent or less of the decrease.

It must be recalled that the million-dollar import increases used as a base for the coefficients are expressed in 1953 prices, that the distribution of output changes is based on a study of interindustry relations in 1947, and that the output of most of the industries was converted into employment on the basis of employment-output relations prevailing in 1953. Before these estimates can be applied to current problems, there-

fore, some judgment must be made about the changes that have occurred since the years to which the basic data relate.

Unfortunately, little is known about the changes in interindustry relations since 1947. Such changes may certainly exert substantial influence on the employment effects in some of the 72 single-industry liberalizations. However, for reasons which cannot be gone into here, my judgment is that their influence on the median and quartile values is likely to be much less than the combined influence of changes since 1953 in import prices and in employment-output relations.

As to these two changes, I have time to state only the general conclusion: Prices of imports in the economic classes that have substantial protection appear to have been about the same in 1959 as in 1953 but have recently shown a slight tendency to rise. Most import increases that now have a domestic value of one million dollars therefore represent no greater and perhaps a smaller physical quantity than those implied in the estimates. The effect of changes in output per man since 1953 is, generally, to reduce the employment effects of a given physical quantity of import increases. Taking both types of change into account, it seems probable that in most, if not all, of the 72 industry liberalizations analyzed, the effects of liberalization undertaken in 1960 would be somewhat smaller, per million dollars of import increase measured at present domestic port values, than those indicated by the estimates I have given.

II. Comparison of Employment Effects of Liberalization with Employment Implications of Other Economic Phenomena

To put the estimates of these different employment effects of liberalization in perspective, we may compare them with the employment effects of other economic phenomena. Since the employment effects of liberalization are expressed as numbers of employees per million dollars of import increases, however, we can make the comparisons only if we either assume a certain import increase and compare the amount of its effects with other magnitudes or choose employment effects of selected amounts and find what import increases would be required to cause them. Both approaches are useful.

Some types of employment effect are comparable with some types of economic phenomena; others are comparable with others. Before we can decide which employment effects of liberalization to compare with which other economic magnitudes, we must distinguish the ways in which these different effects are relevant to policy.

Net Employment Effects Compared with Cyclical Changes and Growth Requirements. First, there are the effects of liberalization on the aggregate demand for goods and services. These are the effects relevant to the question of whether liberalization would have a restraining or depressing effect on general business activity and, if so, how great these effects would be. To estimate this effect requires estimating the stimulating as well as the depressing effects and striking a balance between them. To this concept, the estimates of total net employment shown in line 8 of the table are the most relevant of the estimates presented. Estimates of net effects, if applied to specified increases of imports, can be used to judge how much employment needs to be stimulated by other means—whether they are public policy measures or "natural" market forces—in order to restore the level of employment that would have existed in the absence of liberalization.

The net employment effects of liberalization may be compared with the net changes in civilian unemployment that have occurred in postwar business recessions.

An increase of imports valued at 1 billion dollars at domestic ports in 1953 could cause a net decrease of, at most, 175,000 employees. (An import increase of this size would be approximately one-sixth of total dutiable imports in 1953 and probably about one-eleventh of those in 1959.) To have this much effect it would have to be concentrated entirely on apparel—the industry with the largest net decrease in employment per dollar of output displaced. Such a decrease is one-quarter of one percent of the estimated 1959 civilian labor force. The increases in the rate of unemployment that occurred between the troughs and the peaks of unemployment accompanying the three postwar recessions varied between 3.5 and 4.2 per cent of the civilian labor force.² Evidently the largest possible net decrease in employment that could result from an increase in imports valued at 1 billion dollars in 1953 prices is only about 7 per cent of the smallest cyclical increase in unemployment that has occurred since World War II.

An alternative way of putting the estimates of net employment decreases into perspective is to ask: What is the minimum increase of imports due to liberalization that would have to occur to cause a net decrease in employment of, say, 1 per cent of the 1959 civilian labor force; i.e., a decrease of 696,000 employees? The answer is: An increase of 4.0 billion dollars, valued in 1953 at domestic ports. This figure greatly exceeds the increase in imports contemplated by any measure that has been officially proposed or that is possible under the present Trade Agreements Act.

² These figures are based on the Bur. of the Census' estimates of the seasonally adjusted percentage of the civilian labor force unemployed. The increase of 4.2 per cent occurred in the 1948-49 recession and reflects the peak rate reached in Oct., 1949, which was exaggerated by a coal strike. If the Nov., 1949, rate is taken as the peak in this recession, the increase is 3.1 per cent, and the range for the three postwar recessions is between 3.1 and 3.7 per cent.

It is important to note that the estimate of 175,000 for the maximum net decrease of employment per billion-dollar import increase assumes that the liberalization occurs entirely in the one industry where it would cause the maximum net decrease of employment. It therefore exceeds the maximum effect for any practical billion-dollar program. On the more realistic assumption that a liberalization program would directly displace the outputs of many different industries, the net employment decreases would probably be nearer the median effect of the 72 cases, or about 86,000 employees. On that assumption, a billion-dollar program would cause a net decrease in employment of less than one-thirtieth of any of the postwar cyclical increases in unemployment, and the import increase required to cause a net decrease in employment of 1 per cent of the 1959 civilian labor force would be more than 8 billion dollars in 1953 domestic prices.

These conclusions are based partly on the estimates of net employment effects derived from the judgments referred to earlier about individual foreign country's reactions to increased earnings. If one assumes that exports would increase by the full amount of the net increase in foreign dollar earnings, the net decreases of employment would of course be much smaller.

To offset net decreases of employment, expansion of markets would be required. The need for expansion is, of course, an ever present one for an economy in which the labor force and output per man are both growing. Whatever expansion of markets is required to offset the employment decreases caused by liberalization, therefore, merely increases the amount of a need that already exists. It is important to note also that, in contrast to the potential additions to unemployment caused by growth, which occur year after year, the net decreases of employment caused by import liberalization occur only once.

We may ask the question: By how much would the expansion of markets required by growth alone be increased if we add to it the additional once-and-for-all expansion required to offset the maximum net employment effects of a liberalization program that increases imports by 1 billion dollars in 1953 domestic prices?

To make this comparison, we need to estimate the job increases that will be required to employ workers released by increases in output per man and net additions to the labor force. For present purposes we may neglect the expansion of employment that would be required to absorb unemployment in excess of some "necessary" or irreducible minimum. We may also neglect the expansion required to absorb workers employed in producing goods and services for which there is no demand at prices that cover costs of production, such as surplus farm products, although a rational economic policy calls for expansion sufficient to

absorb these workers, too. We may therefore work from a base representing what civilian employment would have been in 1959 if unemployment had been no higher than, say, 4 per cent of the civilan labor force, this being the highest of the figures widely regarded as an acceptable minimum. This conservative definition of full employment implied civilian employment of 66.7 million in 1959.

Let us assume that output per man will rise by 2.5 per cent a year.³ Applying this increase to the full civilian employment figure of 66.7 million for 1959, we find that 1.6 million more jobs will have to be created merely to offset the net effects of one year's change in average output per man. The labor force, moreover, is likely to expand by approximately 1.0 million from 1959 to 1960, which implies that the number of jobs required for maximum employment would have to rise by nearly 1.0 million, even if output per man remained unchanged. Adding these two changes together, we find that the total expansion of job opportunities required will be approximately 2.6 million.⁴

This is the figure with which the net employment effects of a 1-billion-dollar liberalization program may be compared. We found that the median net effect of such a program would be to release 86,000 employees. Thus such a program would have the effect of raising the needed expansion of employment by about 3.5 per cent, or from about 2.6 to about 2.7 million, and doing so for only one year. For a program with the maximum net effect, the needed expansion would be increased by twice as much, or approximately 7 per cent of annual growth requirements.⁵

It thus seems clear that, from the point of view of its effect upon the economy as a whole, the problem created by increases of imports resulting from a reduction of import barriers would add relatively little to the problem—if it is a problem—created by normal growth of the labor force and rising productivity. If we solve the "growth problem," the effects of import liberalization cannot be significant for the economy as a whole.

It does not follow from this conclusion, of course, that decreases of

³ Increases in output per man in civilian employment between the average for the period 1955-57 and 1965 have been projected by the National Planning Association at an average rate of 2.5 per cent a year. This is the net result of a projected average increase of 3.2 percent a year in total output per civilian man-hour and a projected average decrease of 0.63 per cent a year in hours worked per man.

The amount of the annual increases required by these two elements of growth will increase year after year even if the percentage changes in output per man are constant, both because growth in the labor force will cause constant percentage changes to release a growing number of men and because the annual growth of the labor force itself probably will far exceed 1.0 million from 1960 until at least 1975. See the Census Monograph, The American Labor Force: Its Growth and Changing Composition, by Gertrude Bancroft (John Wiley and Sons, 1958), p. 145.

⁵ Again, it should be noted that these estimates of net decreases assume export increases that are much less than the net increases of foreign dollar earnings.

employment caused by liberalization would not add substantially to the problem of finding jobs for the individuals who are displaced. If markets did expand sufficiently to keep up with the increasing output per man of an increasing labor force, the expansion would not necessarily solve the problems of the industries and localities in which the displacement occurred. They might not participate in the general expansion.

Gross Employment Decreases in All Industries Compared with Normal Turnover. If one is concerned with the hardship that may be felt by individual employees who are displaced when protection is reduced, the most relevant estimates are those of gross employment decreases. We have seen that the employment decreases associated with liberalization, although generally much larger in the liberalized industry than in any other industry, are not confined to it and in fact may be quite large in industries which are direct suppliers of the liberalized industry. To a broad view of the displacement problem, therefore, the estimates of gross decrease of employment in all industries, shown in line 1 of the table, are the most relevant.

As we have already noted, the problem of displacement is best measured by gross decreases of employment. The most appropriate magnitude with which to compare these gross decreases in order to put them in perspective is the number of people who have been unemployed or laid off at some time during a year of high employment. Such estimates have been made by the Bureau of the Census for 1955 and subsequent years. They show that in 1955 and 1956, respectively, 9.8 and 8.8 million different persons, constituting 15 and 13 per cent, respectively, of the annual average civilian labor force, were unemployed or on layoff at some time during the year. Since 1955 and 1956 were both good years, this percentage is apparently not abnormally high.

Applying the average percentage for these two years to a civilian labor force of 70½ million, which is the average civilian labor force expected in 1960 and is less than that of subsequent years, we get at least 10 million as the number of persons who will be unemployed or laid off at some time during the course of a normal year in the near future. It should be noted that this figure does not include the vast number who go to one job from another one or from outside the labor force without an intervening period of unemployment.

These figures indicate that it is quite usual for a large number of people—approximately one for every seven in the civilian labor force at any one time—to be out of a job and looking for one at some time

These figures include a relatively small proportion of people who were laid off with instructions to return to work within thirty days and were presumably not looking for work, whose number is not available separately. On the other hand they include only people who worked for at least one week during the year; another million who did not work during the year were also looking for work.

during the year. The other side of this picture is that vacancies are constantly being made available by discharges, retirements, deaths, and voluntary withdrawals from the labor force as well as by the creation of new jobs. In contrast to the 10 million or more vacancies that will be normally required to absorb them, the additional vacancies required to absorb the maximum of 224,000 employees or the median of 115,000 employees who could be displaced by a billion-dollar increase of imports are insignificant fractions.

Gross Employment Decreases in Liberalized Industries Compared with Voluntary Separations. The problems of hardship and dislocation are more likely to be serious in the liberalized industry than in other industries, however, for the liberalized industries are less likely than the nonliberalized industries to benefit from the stimulating employment effects of other economic influences such as export increases and general economic growth. Hardship in the liberalized industry is therefore not likely to be averted and may not even be mitigated by expansion of general economic activity. That is why special policy measures, such as adjustment assistance programs, may be required to handle their displacement problem. In forming judgments about the appropriate size of such measures or, more generally, about the portion of displacement that is most likely to present an acute problem, the estimates of gross employment decreases in the liberalized industry, shown in line 2, are most useful.

To get perspective on the magnitude of displacement in the liberalized industries, we may compare the displacement in them caused by liberalization with the number who leave them voluntarily in a normal year. This comparison is of interest because the number leaving voluntarily during a year gives some indication of how fast an industry could shrink in response to increased import competition without laying employees off; i.e., merely by failing to replace those who leave voluntarily.

For 67 of the 72 industries analyzed we can estimate, albeit crudely, the annual number of voluntary separations associated with their 1957 levels of employment on the assumption that those who leave are not replaced. By comparing these estimated voluntary separations with the gross displacement resulting from a million-dollar increase of imports, we find that for 15 of these 67 industries import increases of competing products of only 50 million dollars a year at 1953 domestic values would cause a once-and-for-all gross employment decrease greater

⁷The statement concerning export increases is based on the general presumption that firms which have protection against imports do not produce for export. The conclusions about growth are based on the findings of a recently completed study by Beatrice N. Vaccara, Employment and Output in Protected Manufacturing Industries, which indicates that while not all protected manufactured industries have had postwar declines in employment, the industries most likely to suffer adverse effects from import liberalization are generally laggard in growth.

than the number of voluntary separations in a normal year, but that in 21 other industries the import increases would have to exceed at least 200 million dollars a year to do so. Four industries—meat packing and wholesale poultry, apparel, passenger cars and light trucks, and aircraft and parts—are so big that imports of the corresponding products could increase by 1 billion dollars without causing gross displacement in them that exceeds the number of their employees who leave voluntarily in a normal year.

These comparisons have been intended to put into perspective the employment effects of import liberalization. Such effects should not dominate decisions about import policy but they have played an important role in the debate about policy. The guesses about the size of these effects have covered a wide range. It is our hope that these estimates will greatly reduce that range.

TRADE BARRIERS AND NATIONAL SECURITY

By WILLARD L. THORP Amherst College

National security is in the same order of priority for a nation as self-preservation is for the individual. It has such universal acceptance that it ranks along with mother and the future generations as the perfect high note on which a public speaker may bring his speech to a close. Every advocate of some public action tries to associate his proposal with the defense of the nation. No one can be against it, including legislators, as they vote on the various issues which come before them.

Nearly all individuals would feel that an action should be taken or a sacrifice borne if it clearly would contribute substantially to national defense. The problem is, of course, to decide what bearing a particular line of action does have on national security. This in turn depends upon two sets of assumptions concerning the requirements for our defense. The first is related to the basic strategic concept of mobilization: Should the objective be "Fortress America" with all decisions being made in terms of United States capabilities or should the evaluation of our defense capability include our allies and even concern itself with how much of the rest of the world is kept free of Soviet domination. The second set of choices relates to the assumption which is to be made as to the nature of the threat to us. Is it to be a global war with intercontinental missiles which presumably will be over in a matter of hours. a series of local wars in various restricted areas with most transportation routes unaffected, or is it to be an economic and psychological war of market disturbance, economic pressures and appeals, and competing images and symbols? Depending upon one's evaluation of these matters, one may be inclined toward either a protectionist withdrawal or the attempt further to strengthen international co-operation.

It is clear that postwar American security policy has been based upon the concept of collective security with a network of defense treaties and the co-operative development in several international groupings of military plans and capabilities. The idea of co-operative action in the trade field appeared in the Trade Agreements legislation in 1934. Since American trade policy has been directed for twenty-five years essentially to lowering or removing trade barriers, the executive branch of the government has tended to minimize the use of the national security argument in dealing with foreign trade problems. Thus our economic position has been generally consistent with our security and political policies.

In the negotiations relating to the ITO Charter following shortly after the end of World War II, the attempt was made to limit as far as possible the circumstances under which national security would be utilized as an excuse for restricting trade. It allowed only three exceptions under this heading (Article 99) as follows:

Nothing in this Charter shall be construed . . . to prevent a member from taking, either singly or with other States, any action which it considers necessary for the protection of its essential security interests, where such action

i) relates to fissionable materials or to the materials from which they are derived, or ii) relates to the traffic in arms, ammunition or implements of war, or to traffic in other goods and materials carried on directly or indirectly for the purpose of supplying a military establishment of the Member or any other country, or

iii) is taken in time of war or other emergency in international relations.

It is hard to imagine any more limited application of the narrow national security concept than these three exceptions, although the final phrase, "other emergency in international relations," might be interpreted unexpectedly as having wide and continuous application in the postwar world. While the provisions of the Charter were never adopted as a formal expression of U.S. policy, much of the Charter was incorporated in GATT, and the underlying approach certainly has appeared in the American performance in trade agreement negotiations—that national interferences with the international exchange of goods and services should be minimized so that the processes of trade would be allowed to work to the benefit of both buying and selling countries.

While national security often appeared in trade policy debates, it seldom entered directly into policy decisions. Of the various petitions for action under the escape clause provisions, the only one where national security played an important role was that relating to Swiss watches. The argument was that the American watch industry needed to be protected since it was the only experienced producer on a large scale of precision products requiring fine tolerances. This industrial ability was stated to be essential in the light of the rapidly developing field of bombs and missiles with its need for time fuses and other intricate and compact machinery. Various studies were made of these claims with differing results. Ultimately, the tariff was increased, though not solely on national security grounds. As will be noted below, the national security aspect of the case was later reviewed and disallowed.

National security became an explicit consideration in connection with trade agreements in 1954 when an amendment to the Trade Agreements Act was passed which "stated the authority of the President to limit trade agreements negotiations to cases in which the duty reduction would not threaten domestic production needed for defense mobilization." The following year, Section 7 of the Trade Agreements Exten-

¹ Executive Office of the President, Report to Subcommittee on Foreign Trade Policy (Aug. 30, 1957) (ODM. 21404).

sion Act of 1955 extended this idea both as to policy and procedure. If imports are such as "to threaten to impair the national security," the President "shall take such actions as he deems necessary to adjust the imports of such article to a level that will not threaten to impair the national security." Responsibility for investigating, presenting findings and making recommendations was placed on the Director of the Office of Defense Mobilization.

This addition to the Act was not interpreted as being an extension of the escape clause which related to threatened injury to the industry concerned. In fact, the Director informed Congress:

Section 7 in fact provides a means for relief only in cases where imports threaten the national security by impairing or inhibiting the creation of essential productive capacity, required skills, or other factors essential in times of emergency. While the essential function of the Tariff Commission under the "escape clause" is the determination of injury to industry from imports, we are concerned under section 7 with discovering any threatened impairment of the national security, whether or not injury to a domestic industry is involved.²

In accordance with the usual process of rewriting legislation each time it comes up for consideration, Section 8 of the Trade Agreements Extension Act of 1958 is a continuation and enlargement of the so-called "national security clause." It adds another approach to the problem as follows:

. . . the Director and the President shall further recognize the close relation of the economic welfare of the Nation to our national security, and shall take into consideration the impact of foreign competition on the economic welfare of individual domestic industries; and any substantial unemployment, decrease in revenues of government, loss of skills or investment, or other serious effects resulting from the displacement of any domestic products by excessive imports shall be considered, without excluding other factors, in determining whether such weakening of our internal economy may impair the national security.

This new statement still focuses on national security, but suggests that the consideration is not only that of a restriction on the contribution of the industry to national defense requirements in terms of products and skills but also its possible influence upon the total economy which, if weakened, might impair the national security. Specifically mentioned as sources of such impairment are substantial unemployment, a reduction in the tax base, and the loss of skills or investment. This new provision opens up a fascinating problem of the sources of economic strength and weakness. In a sense, it covers the three main categories in gross national product in giving weight to the protection of employment, investment, and government revenues. However, unless a major job of rationalization is done, it seems obvious that this provision cannot be applied to many situations, particularly in view of recent discussions as to whether or not the stoppage of the important steel industry was a threat to our national economic health. It is hard to imagine

² Statement by Hon. Gordon Gray before House Committee on Ways and Means, Feb. 18, 1958. ●

many industries where imports of a particular product or group of products could bring about such serious consequences on such a broad scale as to weaken our domestic economy in its total operation in such manner as to impair the national security. In all Section 8 cases, whether moving directly through the industry's essential defense character or indirectly through its importance to the general welfare, one must ultimately reach his conclusion in terms of national security and not in terms of whether or not the industry involved is injured.

The problem of the relationship of specific commodities to military potential had been under consideration by the executive branch of the government for some time in connection with restrictions on exports to the Soviet Union. It was apparent that there was no sharp line of demarcation and some even argued that buttons which held uniforms together were military essentials. Having this experience in mind, it was easy to presume that the new amendments would open the door to a procession of industries hoping to march through to higher protection. However, who could be against considerations of national security?

These amendments of 1955 and 1958 took the problem of the relationship of specific imports to the impairment of national security out of the area of decisionless debate into that of findings and formal action. The general provisions of the statute had to be interpreted with reference to specific situations. Although twenty-one cases have been filed with the Director of Office of Defense Mobilization (later, Director of the Office of Civil and Defense Mobilization), only eight of them have come to an actual decision. Three have been withdrawn (photographic shutters, stencil silk, and tungsten); five have been postponed either because an escape clause action was pending or the industry wished to restudy its case (analytical balances, clinical thermometers, fine mesh wire cloth, wooden boats, and wool felt); five are still pending (dental burs, large steam turbine-generators, foreign surplus military rifles for the sporting goods market, transistors, and wool knit gloves). For the remaining eight cases on which action was taken, a letter to the applicant explaining the decision is available concerning each case on which action was taken under the 1955 Act. The 1958 Act established a more elaborate procedure and the finding in each case is now described in a "Memorandum of Decision."

The findings for these eight cases represent the beginnings of case law on the subject. In seven of them, the petition was denied, it having been granted only in the case of crude oil and petroleum products. In the case of denial, the Director of OCDM has always recognized the importance of the product or industry to national defense. He has obtained the latest estimate of possible requirements in the case of national emergency and has set the probable supply against that estimate.

In several instances—wool products, jeweled watches, pin-lever watches and clocks, and córdage—he stated that there has been such a marked reduction in military requirements of the specific item in question that the domestic productive capacity is much more than adequate for any likely emergency situation. In the watch and clock cases, he added that there has been not only a reduction in requirements but also a substantial expansion of precision skills and plant capabilities at other points in our economy during the last several years.

The analysis in the case of hydraulic turbines, hydraulic turbinedriven generators, transformers, and circuit-breakers required for the generation and transmission of large-scale power involved an analysis of the total power generation picture. The Director of OCDM concluded that foreign equipment was such a small part of the total, particularly in essential stations, and the possibility of breakdown was so random as to be well within the ranges of tolerance covered by reserve capacity. He concluded that he would not try to judge the competence of buyers as to specifications and performance and was convinced that maintenance and repair was no great problem, though he suggested that assurance of repair facilities be included in future purchase contracts.

In the cases of fluorspar and cobalt, the presence of substantial stock piles was an important element in the decision, plus the availability of supplies from Canada in both cases, plus fluorspar from Mexico and cobalt from Cuba. In the case of fluorspar, the Director stated that the key to the problem is to prevent any substantial hindrance to imports of good quality fluorspar from any readily accessible source. In the case of cobalt, the memorandum presents the added point that the addition to price required to maintain primary U.S. operations (as distinct from by-product cobalt production) would exceed the payroll, taxes, and return on investment of the primary producer, and thus have no over-all economic welfare benefit.

In several instances, the Director of OCDM remarked that consideration of foreign relations gave added support to his conclusion to deny the petition, emphasizing that one important dimension of national security reaches beyond purely domestic considerations. This was spelled out, though in quite general terms, in the hydraulic turbine case. Four objections to interfering with imports were noted: It would damage our national policy of promoting the strength of the free world through co-operation in the trade fields; it would impair our efforts to resist world-wide Soviet penetration; it would stimulate restrictions against and curtail dollar availability for our exports; and it would be interpreted by our allies as a retreat from the basic concept of interdependence of the free nations of the world.

It has already been noted that the only case in which the national security provision has been applied is that of crude oil and petroleum products. In 1945, U.S. production of crude oil was two-thirds of the world's output. By 1957, the rapid expansion in petroleum output in the Middle East and other areas had reduced the American share to 40 per cent. In 1946, crude oil imports into the U.S. were 5 per cent of U.S. crude production. By 1953, imports had reached 10 per cent and were increasing more rapidly than U.S. production. In 1947, the tariff was lowered; it was re-established from 1950 to 1952 due to the abrogation of the Mexican Trade Agreement; and was lowered again in a trade agreement with Venezuela on October 11, 1952. The efforts of some branches of the petroleum industry to obtain protection against oil imports began to appear in the late forties. In connection with the Venezuelan negotiation, the Independent Petroleum Association of America strongly opposed any lowering of the tariff. However, the President finally approved a reduction which went even below the perilpoint as it had been determined by the Tariff Commission.

The less sympathetic position toward oil imports of the present Administration was first presented explicitly by the Presidential Advisory Committee on Energy Supplies and Resources Policy which was established in July, 1954, and made its report on February 26, 1955. It stated:

The Committee believes that if the imports of crude oil and residual oils should exceed significantly the respective proportions that these imports of oils bore to the production of domestic crude oil in 1954, the domestic fuels situation could be so impaired as to endanger the orderly industrial growth which assures the military and civilian supplies and reserves that are necessary to the national defense. There would be an inadequate incentive for exploration and the discovery of new sources of supply. . . . In the interest of national defense imports should be kept in the balance recommended above.

As a result of this report, the Director of ODM obtained import forecasts for 1955, and on October 29, 1955, suggested to all importers that they reduce their planned imports by approximately 7 per cent. Similar exhortations to restrict oil imports during the greater part of 1956 had little effect.

In the meantime, after considerable debate mostly relating to the petroleum situation, the Congress had incorporated Section 7, the so-called "national security amendment," in the Trade Agreements Extension Act of 1955. The Independent Petroleum Association of America filed a petition on August 7, 1956, requesting action under that section. Action on the matter was suspended in December because of the Suez crisis, but the Director of ODM stated that, had the crisis not inter-

² Quoted in OCDM, Report of Investigation of Imports of Crude Oil and its Derivatives and Products (July, 1959), par. 7.

vened, the evidence concerning import programs which he had at hand indicated the existence of a threat to our national security, and he would have had so to certify to the President. He did so certify on April 23, 1957. The President then referred the matter to a cabinet committee called the Special Committee to Investigate Crude Oil Imports, which promptly confirmed the diagnosis and recommended a voluntary import limitation plan. For Districts I-IV (the U.S. exclusive of the West Coast), it recommended cutbacks to 10 per cent below average crude oil imports for the years 1954, 1955, and 1956. In December, 1957, the industry program was extended to imports into District V.

The original plan applied to crude oil only. In 1958 it became apparent that, crude oil imports being restricted, the imports of products were increasingly rapidly. The new Section 8 in the Trade Agreements Extension Act of 1958 was directed in part to this problem and authorized the President to take such action as he deems necessary not only in connection with the article itself, but also as to derivatives of the article. When the mandatory program was put into effect as described below, the derivatives were taken into account.

In early 1959, a new investigation of the petroleum situation was made by the Director of OCDM which was again reviewed by the Special Committee. It found that the voluntary restriction program was not sufficiently effective, that import quantities were still increasing, and that the ratio of reserves to demand was declining, thus threatening "an insufficiency in the domestic supply of petroleum for the requirements of an expanding industrial economy and, in turn, for the requirements of national security. It appeared that there was a direct relationship between this decline and the fall-off in exploratory drilling and that this fall-off in exploratory drilling was itself related to the quantities and circumstances of crude and products importation from areas of very much greater proven reserves where production costs were very substantially lower than costs in the United States."

The Director of OCDM reported to the President on February 27, 1959; the Special Committee on March 6; and a Proclamation establishing mandatory import license controls was issued on March 10. According to the President's Statement, "the new program is designed to insure a stable, healthy industry in the United States capable of exploring for and developing new hemisphere reserves to replace those being depleted. The basis of the new program, like that for the voluntary program, is the certified requirements of our national security which make it necessary that we preserve to the greatest extent possible a vigorous, healthy petroleum industry in the United States." The new import

OCDM Report, par. 29.

⁵ White House Release, Mar. 10, 1959.

restrictions were modified in one direction by an Amendment to the Proclamation dated April 30, 1959, which exempted crude oil and products which enter the United States by pipeline, motor carrier, or rail from the country of production, thus extending the unrestricted area to include petroleum "from sources which would be accessible by overland transportation in the event of an emergency"; namely, Canada and Mexico. It is also stated that "conversations will continue with Venezuela and other Western Hemisphere countries looking toward a coordinated approach to the oil problem as it relates to defense and to the interests of all producer countries."

All through the record, the argument seems to be simply that the possibility of "excessive quantities of low-priced oils from off-shore sources" will have a "deleterious effect upon adequate exploration and the development of additional reserves" and this in turn "threatens to impair the national security." There seems to be no question about the recent failure of new reserves discovered within the United States to keep up with American consumption. Likewise, it is clear that drilling costs had been rising, wells had to be sunk to greater depths, and there was some increase in the proportion of dry wells resulting. Furthermore, there was a clear-cut tendency for American corporations to increase their explorations and drilling in areas outside the United States.

One cannot avoid noticing the difference in the analysis between this case and all the others which were turned down. There is in this case no discussion of mobilization requirements which would necessarily have to take into account the extent to which domestic uses could be curtailed in an emergency situation. There is no discussion of supplies, which would have to review the situation with respect to the present drastic restrictions on output through the setting of a limited number of allowable days for operating wells, the limitations imposed by transportation and refinery capacity, and the reserves available in Canada and Mexico. There is no discussion of alternative ways to encourage further development such as is incorporated in the present tax laws, presumably to achieve the same purpose of developing reserves.

Nor is it clear as to just how the specific legislation is being applied. The case is not made and could not be made of any present shortage of domestic oil, nor is the case made specifically under the new Section 8 in terms of the impact of the industry on our general economic welfare. In fact, the record suggests that concern about oil imports and the authority to utilize the national security justification developed contemporaneously. As stated above, the Director of ODM had made

⁶ White House Release, Apr. 30, 1959.

⁷ Quotations from OCDM Memorandum to the President (Feb. 27, 1959).

appeals to the importers to curtail imports before the new legislation was passed. The Congressional debates suggest a very close relationship in the minds of some members of Congress particularly interested in oil and their attitude toward the extension of the trade agreement legislation. This then was not a case which was considered in the light of some new national policy declaration but one in which the policy declaration was written with the particular case in mind. To be sure, the voluntary restriction approach was tried at first. It was hoped that it would succeed since the threat of, and authority for, stronger measures were present. However, exhortation has never proved to be a very effective instrument of government and ultimately the authority had to be used.

It is important to note that up to the present time no industry except petroleum has been able to make an effective case for added protection under the national security amendment. This is not a matter of negligence but a sign of strength—in fact, an indication of a much more realistic approach to the problems of preparedness than ever before. Of special importance is the new development of the programmed stock pile, calculated in terms of the best estimate available of possible emergency needs. In the second place, there is the much more careful calculation of mobilization needs-still an estimate, but at least the product of responsible effort. In the third place, there is the vast volume of active government contracts which provide a basic defense producing apparatus. In the fourth place, there are devices other than import restriction for meeting a prospective deficit in some defense requirement such as encouraging domestic production by rapid amortization by means of the issuance of Certificates of Necessity under the provisions of the Internal Revenue Code, the granting of special government loans under Section 302 of the Defense Production Act, and the giving of purchase contracts for the purpose of broadening the mobilization base. These devices have the great advantage of permitting fairly exact planning to meet the requirements. On the other hand, trade controls are clumsy instruments, being essentially negative in character, and not providing any clear assurance of performance by the domestic industry.

It is exceedingly difficult to envisage the economic requirements for present-day warfare. Any talk of a mobilization base assumes a long war during which the economy will be called upon to operate under controlled conditions as in previous wars. Obviously, there is no preparing for an all-out nuclear war except to have counter striking power and a much greater system of civilian defense than anyone is contemplating. For local wars, on the other hand, there is every chance that the shipping lanes will keep open and there is no need to be completely

self-sufficient. Under such circumstances, we might be better off if there were alternative sources of supply rather widely scattered.

There is a more basic reason why the national security amendments should be used sparingly and that is that our national security is today inextricably involved in international arrangements. Our global strategy is to develop and maintain a solid front against the Communist threat of aggression. We have made a major effort to co-operate in the development of military strength and defense programs and it would be a strange paradox if we shut off some element of an ally's trade with us presumably to build up own own economic strength for our own defense purposes. More important is the general point that co-operation in one field facilitates co-operation in others.

More recently, it appears that the danger to the free world may lie less in a direct military threat than in the possibility of a sort of economic warfare. The USSR is in a position where it can devote such resources as it may wish to a controlled program of trade and aid. During the last five years, it has greatly increased its economic contacts with a selected group of countries. Our concern should be that the Soviet bloc not obtain such a preferred and strategic position in any country's economy as to be able to use it for political pressures. The degree of possible dependence is related inversely to the alternative markets available to the suppliers. The Soviet bloc will not be able to apply economic pressures if the West maintains active trading opportunities and healthy markets. From this point of view, the Western position is weakened by fluctuations in demand due to recessions, by wide variations in commodity prices, by wide shifts in inventory holdings, by arbitrary barriers to trade, and by the lack of any machinery to deal quickly with an emergency in some commodity market. These are all elements bearing on our national security. To deal with them will require co-operative action by the leading trading countries in the free world. There is therefore much to be done to strengthen the economy of the free world. In addition to the possible loss in economic values and objectives, national security should not be taken as a basis for unilateral action against our allies in a world where every effort is being made to develop a co-operative defense effort.

A CANADIAN LOOKS AT AMERICAN TRADE POLICY

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The commercial policy of the United States has had, for a long time, a decisive influence on the course of Canadian economic development. Indeed, the trading policy of the great neighbor to the south has been, throughout Canadian history, a major preoccupation of Canadian statesmen and Canadian politics. This circumstance arises from the fact of Canada's special dependence upon international trade. Professor Viner has pointed out that "the prosperity of Canada's economy depends on the fortunes of its export trade in far greater degree than is the case for most other advanced countries, and to a far greater degree also than is indicated by the ratio of its exports of goods and services to its national income."

Therefore, the trading environment in which Canada lives is of fundamental importance. This environment is affected by United States policy in two ways. In the first place, United States policy has a large influence on the conditions of world trade in general and, second, it has the power of life and death over the majority of Canadian exports which are sold in the United States market. When a Canadian looks at United States commercial policy he has both these aspects in mind.

When the United States emerged from World War I as the world's greatest industrial nation, it had acquired also a new importance in international economic affairs. Canada became aware of this change very quickly. The growing protectionist policy which culminated in the Hawley-Smoot Tariff was a large factor in the breakdown of world trade during the thirties. This breakdown had a disastrous effect upon Canada. Canadians have always regarded the Hawley-Smoot Tariff as an act of economic isolationism which was completely at variance with the role and responsibility of the United States in the community of nations. Also, this action was the final event in a long period—going back nearly seventy years—during which the two countries failed, in spite of repeated efforts, to achieve any kind of a general commercial agreement between themselves. In the light of the present day, this seems almost incredible but, in any event, by the thirties this failure had left in Canada a large legacy of apprehension and dissatisfaction regarding United States commercial policy. This legacy is not wholly without influence, even today. The turning point came with adoption of Secretary Hull's Reciprocal Trade Agreements program in 1934. This new pro-

¹ "The Gordon Commission Report," Queen's Quar., Autumn, 1957, p. 317.

gram marked the beginning of an entirely new era in Canadian-American economic relations.

At the end of World War II the Reciprocal Trade Agreements program became the main instrument of United States initiative and leadership in international commercial policy. Within the limits imposed by Congress, this instrument was used vigorously in an attempt to reduce barriers to trade and to re-establish a multilateral system of trade and payments among the principal trading nations. The powers given to the United States administration by this Act to negotiate reciprocal reductions in tariffs and to enter into trade arrangements made possible the General Agreement on Tariffs and Trade in Geneva in 1947. Without those powers and without the initiative of the United States no such agreement would have been possible. Notwithstanding its shortcomings, the GATT has been a path breaking and constructive achievement during the very difficult period of postwar reconstruction. It established goals of desirable commercial policy at a time of great uncertainty. The rules which were adopted respecting multilateral reductions of tariffs, most-favored-nation treatment, nondiscrimination, and the use of quantitative restrictions provided a basis for expanding trade on a broad international scale. In the formulation of these aims the United States received the active support and the co-operation of Canada. In fact, the GATT expressed the close understanding which existed between the two countries regarding the manner in which trade should be conducted both between themselves and in the world at large.

Such misgivings as have arisen in Canada have related not to the basic aims but to certain failures and shortcomings in implementation. At the outset, the results which could be achieved were considerably restricted by two important limitations in the United States position. The fact that the United States government did not have the authority to negotiate reductions in its own tariff by more than 50 per cent in any single instance placed something of a damper on the tariff reducing efforts of other countries. This was especially important at the end of the war when the United States tariffs on manufactured goods in many instances included a considerable element of excessive protection and when the United States was so predominately the world's strongest economic power. This circumstance made it more difficult in the early postwar years to make substantial progress in removing barriers to trade between the United States and other industrial countries. Furthermore, the attempt of the United States to obtain reciprocal concessions from countries whose economics were severely disrupted by the war and whose competitive position was weak, also restricted the possibilities which might otherwise have existed.

The other important limitation in the United States position had

to do with trade in agricultural commodities. Because of the policy on high farm price supports the United States was unable to envisage trade in agricultural products on a normal competitive basis. Consequently, the United States government was impelled to insist on special exceptions from the trade rules as they applied to agriculture. In practice these exceptions amounted to a virtual exemption of agricultural products from the significant provisions of the GATT. As a result there was one set of liberal rules for the conduct of international trade in manufactured goods and industrial raw materials, and another set of rules which permitted the exercise of a high degree of national autarky in respect of agriculture. Of course, this exception was seized upon also by other countries interested in high protection for agriculture. This pronounced disparity in the treatment of industrial and agricultural goods had the result of greatly reducing the attractiveness of the GATT and of United States commercial policy for the underdeveloped countries of the world which were dependent upon agricultural exports. In such circumstances many of these countries could not be induced to participate actively in reducing barriers to trade and merely went along for the ride.

However, in spite of these rather serious limitations, United States commercial policy made possible some considerable progress in the reconstruction of world trade during the years immediately following the end of the war. However, as the years went by the development of United States policy encountered increasing difficulties and the early promise of effective United States initiative was not maintained. The failure to adopt the Havana Charter raised widespread doubts regarding the future intentions of the United States Congress. Because of the negative attitude of the Congress it has never been possible to establish a fully effective international trade organization. The Reciprocal Trade Agreements Act—the main instrument of United States commercial policy has always had a short life and has been subject to the many political hazards of frequent renewal. At almost every successive renewal, additional limitations were introduced. Peril points, wider escape clauses, and national security provisions have further restricted the scope and effectiveness of the Act. In spite of this multiplication of safeguards, a mighty and sustained effort was required on every occasion to obtain an extension of the legislation. The agricultural escape clauses were used more frequently to control imports of farm products into the United States. This negative action has in recent years been superseded in its impact by the surplus disposal policy which has carried with it at least the danger and threat of doing harm to the commercial markets of other countries.

The real significance of these exigencies in United States commercial

policy after 1947 does not lie so much in what was actually done, but in the doubts, uncertainties, and apprehensions which were created in the international trading community. Without the foundation of confidence and certainty regarding the trading policies of the world's largest industrial nation, it has not been possible to achieve a progressive and substantial reduction in barriers to trade on a wide international basis. In these circumstances the best that could be done was to prevent any serious backsliding. In fact, that is all that has been accomplished for some time.

At this point one must hasten to add that commercial policy has been but one aspect of United States foreign economic policy. It should be emphasized that the reconstruction of world trade after the war was made immensely more difficult by the currency and balance-of-payments problems of the war-torn countries which persisted far longer than had been anticipated. The contribution of the United States to the solution of this problem through the Marshall Plan and the foreign aid program was not only laudable in concept but also highly successful and farsighted in the outcome. The restoration of convertibility of European currencies, the rapid expansion of production, and the improved competitive position of overseas industrial countries was greatly assisted by enlightened United States policies. Furthermore, it should be pointed out that in spite of the waverings of Congress, successive United States administrations kept aloft the flag of a liberal trade policy and resisted as much as possible the use of the escape clauses and restrictions which the Congress had urged. The barks and threats have always been more serious than the bite.

Nevertheless, an outside observer is bound to say that all this has not been a satisfactory substitute for a stable and farsighted commercial policy. The shortfall in United States commercial policy has been a significant factor in the failure to make continuing progress in the achievement of an expanding multilateral system of world trade. This failure is at least one of the more important elements in the circumstances which at present are bringing about the regionalization of world trade through the formation of economic blocs. This tendency is contrary to a more universal concept of international economic relations. These developing blocs are already causing divisions and strains among some countries of the free world. Moreover, it remains to be seen whether these blocs, which are focused upon a few of the great industrial nations, will provide an adequate place for the underdeveloped countries of the world. There is the distinct danger that the regionalization of trade will create more political problems than it will solve. This danger can be minimized if the large industrial countries, including the United States, see to it that trade arrangements between the blocs and

the rest of the world are organized on a liberal basis. For this purpose United States commercial policy will need to have more long-range certainty, fewer unilateral escapes, and a greater basis for confidence than it has had in the past.

A Canadian observer is bound to look in particular at United States commercial policy in the light of its effect on trade relations between the two countries. This is a matter of major concern to both nations for the reason that the volume of commercial transactions between them is larger than that which takes place between any other two nations of the world. Each country is the other's principal customer by a wide margin. For a considerable period Canadian-American trade has been growing more rapidly than the national income of either country. United States exports to Canada are normally as large as those to the whole of Continental Europe and almost as large as those to the whole of South America. The United States buys about 60 per cent of all Canadian exports and supplies about 70 per cent of all Canadian imports. These facts explain why the Canadian economy is so highly sensitive to United States economic policy and why Canadians are so insistent on calling attention to the problems which arise.

The great volume of Canadian-American trade has been the result of many factors, including the successful negotiation of trade agreements since the war under which certain tariff barriers were significantly reduced. These agreements were important accomplishments and have contributed materially to the generally good relations which exist between the two countries. However, there are certain features of Canadian-American trade and there are certain trends which are increasingly bothersome to Canadians. These worries relate to a number of biases and restrictive aspects of United States trade policy which are well illustrated in Canadian experience.

Canadian exports to the United States can be divided conveniently into three categories: about 10 per cent agricultural and fish products, 75 per cent industrial raw materials including fuels, and 15 per cent manufactured goods. In the case of farm products, Canadian exports are substantially affected by import restrictions imposed as a consequence of the United States farm price support program. Such outstanding Canadian agricultural commodities as wheat, rye, flax, and dairy products are subject to stringent controls. The remaining agricultural exports, some of which are of major importance, are constantly subject to the exigencies of domestic United States farm policies. Here it should be pointed out that in recent years Canadian farm price policies have also contributed to the difficulties.

In short, Canadian-American trade relations in agriculture are at all times precarious. In the past few years this situation has been

aggravated by the appearance of the United States surplus disposal policy. This policy as formulated and urged by Congress involves the possibility of considerable damage to Canadian commercial markets in other countries. The United States administration has attempted to carry out the disposal program in such a way as to avoid commercial damage as much as possible, but the political pressure behind the scheme is such that it is a continuing source of apprehension to Canadians. This apprehension relates especially to wheat. Here a great deal of misunderstanding and irritation can always arise because wheat is far more important in Canada than it is in the United States. Wheat and flour constitute nearly 60 per cent of total Canadian agricultural exports and account for 20 per cent of total cash income from farm marketings compared with only 6 per cent in the United States. It is much more difficult for Canada to give away or subsidize exports, and the possibility of massive intervention by the United States Treasury can be a most disturbing feature of United States trade policy for any economy which is relatively small.

Industrial raw materials and fuels are the most dynamic and most rapidly expanding element in Canadian exports to the United States. The increase in these exports has been the basis of much of Canada's postwar growth. In this area United States tariffs and other trade barriers are not significant, generally speaking. There is very little problem on this score. However, there is one feature of United States commercial policy in this field to which a Canadian must call attention. There is a tendency to facilitate imports of raw materials and thus to encourage expansion of production abroad during periods of rising demand or of national emergency in the United States. Then when demand falls off or the emergency passes, import restrictions are sometimes imposed which place an unduly heavy share of the burden of adjustment on the foreign supplier, having regard to his dependence on foreign trade. The actions taken respecting lead, zinc, and uranium are recent examples which have affected Canada. It is true that the United States domestic producer in these circumstances is likewise under pressure. but the special shelter which is provided to him is a disruption of the normal development of international trade. It may be justified in the name of national security, but this has an especially hollow sound when it applies to a country which is closely allied in a program of common defense.

Manufactured goods comprise nearly 75 per cent of total Canadian imports from the United States, but only about 15 per cent of Canadian exports to that country. This wide disparity is due in not inconsiderable part to the structure of the United States tariff which is designed to let in raw materials in which the United States is relatively deficient and to protect domestic fabrication. Such a tariff structure is not unique

to the United States, but its consequences for Canada are particularly significant owing to certain provisions of the Reciprocal Trade Agreements Act which have restricted the scope of negotiations. Because of the chief supplier rule and the 50 per cent limit on tariff reductions, Canada has had little choice in successive trade negotiations but to exchange reductions in its rates on manufactures for reductions on raw materials into the United States. Owing to the much smaller scale of Canadian secondary industry, reductions limited to 50 per cent or less of already highly protective United States rates were of little or no use. If larger reductions and the establishment of free rates had been possible, the scope of the negotiations could have been widened and a larger volume of mutual trade in manufactures could have been built up. Furthermore, the invisible barriers arising out of the very complex system of customs administration in the United States have always been more restrictive in their effects on imports of manufactures than in the case of homogeneous raw materials. These biases in both the protective system and negotiating procedures in the United States have had an unsatisfactory and distorting effect on Canadian-American economic relations.

Finally, it is desirable to look at the most recent developments in the trading position of the United States. The over-all deficit in the external payments situation and the outflow of gold has brought concern which may strengthen pressures for changes in United States policies. Part of the deficit is due to the heavy external expenditures on defense and foreign aid and part to the greatly improved competitive position of Western Europe and Japan. The first could be ameliorated through the assumption by other strong industrial countries of some of the responsibilities which the United States has carried for so long. The second may require some more basic adjustments. How these adjustments are made could be of crucial importance to the future of world trade. The time has come for the complete removal of the currency controls and import restrictions which discriminate against the United States. In the United States itself it has become necessary to be concerned with the international competitive position of American industry. The question is how is this competitive position to be maintained? An outside observer is inclined to watch whether inflationary influences will be held in check, whether the rising costs and restrictive effects of the farm price support program will be alleviated by basic adjustments which are clearely necessary, whether there will be adequate emphasis on education and scientific progress to maintain United States leadership, and whether the economic system will remain sufficiently flexible to take rapid advantage of technological advances. If these things are done, then a liberal American trade policy would be feasible over the longer future.

DISCUSSION

Daniel Marx, Jr.: It is gratifying indeed to receive a paper from a self-styled "outside observer" that presents as fair and objective a description of United States commercial policy as Mr. Deutsch's. My comments and questions on his paper involve primarily matters of emphasis and interpretation.

The failure to achieve "any kind of general commercial agreement" between Canada and the U.S. for nearly seventy years referred to by Mr. Deutsch is especially noteworthy when considered against the background of the reciprocal treaty of 1854 and the marked increase in the importance of Canadian-U.S. trade during its life of almost ten years.

It appears to me that Deutsch has understated the damage done by U.S. agricultural policy. U.S. insistence on special treatment for agriculture opened Pandora's box, out of which swarmed so many exceptions that the earlier and probably more acceptable drafts of an ITO charter were revised at Havana so as to appear to many as an unacceptable "series of platitudes joined by a network of escape clauses." Furthermore, U.S. surplus disposal policy, especially barter for strategic and supplementary stock piles, has damaged the commercial markets of both the U.S. itself and other countries.

However, I should like to question Deutsch's allegation that "the shortfall in United States commercial policy has been a significant factor in the failure to achieve an expanding multilateral system of world trade," and that it is "one of the more important elements . . . bringing about . . . the formation of economic blocs." Multilateral trade has expanded very rapidly in the postwar period, indicating that other factors were much more significant, and the European Economic Community owes its impetus primarily to other political and economic causes including persistent prodding by the U.S.

Finally, one may question to what extent provisions of the Reciprocal Trade Agreements Act have, as Deutsch claims, been prejudicial to the expansion of Canadian exports of manufactures to the U.S. Comparative advantage may suffice to explain the more rapid expansion of Canadian raw material and fuel exports, although admittedly the extent to which enlarged exports of manufactures would permit Canada to enjoy greater economies of scale is left unresolved.

Turning to Professor Thorp's paper, one finds it as difficult to quarrel seriously with it as with its amiable author. However, I should like to question more sharply the justification for import quotas on crude oil and petroleum products.

Here is an industry already enjoying a substantial subsidy from other tax-payers in the form of its depletion allowance on the grounds that this is required to stimulate exploration. Now an import quota provides an additional subsidy from consumers for the same purpose. Is the domestic petroleum industry, with political support from coal miners and owners in the case of quotas, rivaling the swindle perpetrated by the silver interests, or is petroleum's claim for aid justifiable on national security grounds? As Professor

Thorp has stated, there has been no discussion of various aspects of the demand for and supply of petroleum in an emergency situation nor of alternative ways to encourage further development. If support for this industry is required for our national security, the facts should be more clearly revealed and due consideration given to methods of public support that are more readily measurable as to both cost and adequacy than the present combination of hidden subsidies.

Mr. Salant's paper places us still further in his debt for a more accurate understanding of the probable dimensions of the unemployment apt to result from increases in our imports. Limitations of time and propriety require that here we accept without further comment Salant's earlier paper describing his basic methods and his estimates of gross decreases in employment as well as criticisms by Humphrey and Sheldon and Salant's rejoinder (*Review of Economics and Statistics*, February, 1958, Part 2).

In respect to today's paper in which Salant estimates net decreases in employment, I am prompted to inquire why some procedures differ from those employed by him in estimating the gross decreases. In estimating gross decreases in employment, for example, Salant wisely avoids the problem of foreign price elasticities of demand and supply; but in estimating net decreases, calculations of his "merchandise reflection ratio" require judgment concerning dollar income elasticity abroad, and furthermore the problems of foreign price-elasticities are replaced by relating trade expansion to the proportions of its distribution in 1953. In view of the changing composition and structure of world trade and in particular of changes in the relative competitiveness of the U.S., how reliable can these judgments be?

Another point of difference is that some sort of multiplier is applied to other countries; but the impact of imports into the U.S. and exports from our shores—which in aggregate are larger than for any other group of countries, although not necessarily a greater fraction of our GNP—are not so multiplied. The use of a multiplier does not appear consistent with Salant's focus on the short-run effects on employment.

Lastly, additional employment associated with the shipping of additional imports is computed, while similar employment related to increased exports is not. The reason is doubtlessly the asymmetrical treatment accorded by input-output analysis to exports and noncompetitive imports on the one hand and to competitive imports, with which Salant is concerned, on the other hand. The drastic decline in the share of U.S. foreign trade carried in U.S. bottoms, however, probably imparts a slight upward bias to Salant's estimates of such employment.

It is all too easy to raise eyebrows over such technical matters, but it is more appropriate, I believe, to raise our hats to Salant's ingenuity in tackling a problem conceptually so formidable and so replete with lags and lacks in data. His study contributes not only to our understanding of this important question but is also a splendid methodological achievement.

It is to be hoped that either he or others will relate the implications of this

study to the duration of unemployment in import competing industries and to the employment problems of specific localities.

Inguar Svennilson: I shall take as my starting point what has happened in Europe in the last few years. Two groups of countries, the six and the seven, with old traditions in protective tariff policy, have taken the very drastic step completely to abolish tariffs between themselves. I think we have reasons to ask if this may inaugurate a new era in tariff policy and if this policy could be extended to other countries, including the United States and Canada.

Most of these European countries are highly industrialized and they compete to a large extent in the same industrial fields. The consequences for their internal economies are far-reaching. Compared to the step they have already taken, it would only mean a difference of degree if new members were added to their free-trade clubs. In the case of the Free Trade Area, it has been explicitly stated that other countries are invited to join. The rules of this area are so simple that this step could easily be taken by new members.

The motives for forming these free-trade groups have largely been political. Nevertheless, it is a striking fact that industry and trade-unions have on the whole been favorably inclined towards the integration policy. And governments have not been too much concerned about the consequences for industries and labor. There has been a quite general consensus that the economic advantages will, on the whole, outweigh possible disadvantages.

This may partly be explained by the escape clauses that have been inserted in both agreements. In the charter of the Common Market, provisions are moreover found for joint efforts to mitigate consequences for labor, industry, and regions. In both groups, arrangements have also been made for a certain degree of co-ordination of economic policy in general. The countries within each group are committed to pursue a full employment policy. The risk, thus, is reduced that one member will lapse into a depression which, through the channels of free trade, would spread to the other countries. This indicates that liberalization of trade is dependent on a certain degree of co-ordination of economic policy in general. And this would probably be a necessary condition for widening the present free-trade clubs to other countries.

The expectation that free trade will bring net advantages is, however, mainly explained by the fact that tariff concessions are mutual. In his very interesting paper, Mr. Salant has analyzed the consequences for the United States of a unilateral liberalization. Historically, this was the approach when political parties were struggling about tariffs. The competition from imports usually attracted more attention than advantages to exports. In a free-trade club, this is, however, only one side of the picture. It is corresponded by increased exports, as a result of liberalization of imports to partner countries. One must also take into acount that, as a result of the discrimination against nonmember countries, aggregate employment within the area should tend to increase at a given level of demand in member countries.

If this reciprocity is taken into account, the employment effects of tariff reductions would be still less harmful than indicated in Mr. Salant's paper.

If the United States or Canada joined Europe in a free-trade club, the net effects on their employment levels might even be positive. The fact that the United States runs a deficit in its balance of payment would, therefore, not necessarily be an obstacle to an initiation of American-European free trade. The net effect would, however, certainly depend on the competitive position of participating countries.

Mr. Salant's paper suggests a method for estimating the changes in employment that would correspond to an increase of imports as a result of a tariff reduction. In principle, this type of estimate could be extended to a bilateral or multilateral reduction of tariffs. If this reduction were restricted to a freetrade club, one would have to take into account the effects of discrimination on the direction of trade. A problem that can be discussed is, however, if the method used by Mr. Salant could be used in the case of a complete liberalization within a free-trade club. In that case the initial change would be so big that the structure of trade may change in a more fundamental way. One would, even in a short-term analysis, have to take into account the rapidity with which enterprise in various countries adjusts to the new market situation, as regards production methods, types of products, and marketing. My assumption would be that the United States would have an initial advantage if it at an early stage joined a European free-trade club. American industry is already organized to supply a very wide market, and the development of its exports to other parts of the joint market would mainly depend on its efforts in marketing. This initial competitive advantage may remain even in the longer run, as a result of obstacles to entry, when market positions of firms have already been established. On the other hand, the long-term growth effects of free trade would be larger for European countries, to the extent that their industries shift into mass production. When European industries have been positive to liberalization of trade, they have mainly been looking to these growth effects. Such changes are, however, much more difficult to forecast than the marginal changes that take place within a given pattern of world trade.

Another aspect of European free trade seems to be of great interest from an American point of view. We know the difficulties of avoiding inflation under a policy of full employment. It seems that monetary and fiscal policies can only keep prices stable if they reduce employment below a level that is desirable. Their effect on prices is indirect and uncertain. Competiton from abroad has a more direct influence on prices in industries exposed to competition. Within a free-trade group, it is the countries with the lowest rate of price increase that set the pace. It is also a well-known fact that in each country periods of inflationary pressure and periods of stabilization alternate. Within a free-trade group, it is likely that in a given year some countries have more success in their stabilization policy than others. In this way, free trade may provide a kind of insurance against excessive national inflation. Countries where prices and wages have risen more than in others have for balance-ofpayments reasons to make a stabilization effort. Employers get stronger motives to resist demands for wage increases when they have the risk of being priced out of the market. As a result of this interrelation of prices, employment can be allowed to rise higher without an excessive risk of inflation.

Bottlenecks that become sources of inflation are less likely to arise as substitution by imports becomes more easy. This seems to be one of the most important aspects of a transition to free trade.

I have confined my remarks to problems of liberalization within a club of highly developed, industrialized, Western countries. The relations to less-developed countries present quite other problems. In the first place, they cannot be expected to liberalize their trade to a very large extent. Liberalization would, therefore, mainly have to be unilateral. An objection to the creation of free-trade areas, mentioned by Mr. Deutsch, is that they, as a result of discrimination, become less liberal in relation to imports from outside countries. If the free-trade movement shall become general, these discriminatory effects would have to be compensated by unilateral reduction of the external tariffs of free-trade groups. If such a policy were followed, free-trade areas could be regarded as first steps in a development by stages towards a liberalization of world trade and not as obstacles to a development in that direction.

JAY W. WILEY: We have here three excellent papers: one on the attitude of an individual in another country, albeit a very friendly neighboring country, toward U.S. foreign trade policy; one a review of the political considerations which have resulted in the implementation of the "national defense" argument in legislation dealing with U.S. foreign trade; and the remaining paper dealing with the consequence with respect to employment, within the United States, of trade liberalization. In all three of these papers there lies the underlying theme, accepted by virtually all economists, that free international trade leads to superior resource allocation among countries and within countries, and hence allows for maximum production, in terms of market prices, throughout the trading world. However, each paper relates itself to a specific problem.

In Professor Deutch's paper, the worry of another nation over imperfections in U.S. foreign trade policy appears. There is no major objection, with respect to the over-all attempt of the U.S.A. to create increased viability in world trade and finance except fear that a vacillating trade policy in the past, now that the deficit in the U.S. current account has assumed importance, will change to a hardening of protectionist sentiment and a reduction of liberal trade. Coupled with that is the fear of regional blocs. I submit that both of these problems are transitional in nature. The attempt to create trade viability and potential currency convertibility in the world has been successful. The timing of policy changes in other countries, to institute genuine currency convertibility when it becomes feasible, needs improvment. Yet there is an understandable lag between political implementation and current need as far as national economic policy is concerned. The most feared economic bloc-a European combination of the "outer seven" and the "inner six"—would also create transitional difficulties. Yet Canada has the second highest living standard in the world, higher on an average than in many parts of the United States, largely because of her participation in the huge U.S. market developments of the past hundred years. Could it be that the rest of the commercial world would benefit, secondarily but absolutely, from European economic integration?

As far as Canada's objections to U.S. trade policy with respect to Canada's own interests are concerned, I can add only the following. It is difficult to find an economic justification for U.S. policy with respect to agriculture in a static framework. The political case for our agricultural policy program is not, of course, the subject of economists' inquiry. In a dynamic framework, economic implications of our policy with respect to agriculture might be treated in the same manner as the dynamic implications of an international trade program might be handled.

With respect to tariff treatment of Canada by the U.S., the following relationship to Professor Salant's paper might be noted. He points out that a trade liberalization program in which an increase of 4.0 billion dollars of imports, valued at 1953 prices, takes place would cause, at worst, a decrease in employment of about 1 per cent of the working force in the United States. While this is not an index of the productivity gains which might be associated with trade liberalization, it can be used as a crude indicator of productivity changes associated with free trade. Using only Professor Salant's figures, a 1 per cent decrease in the working force would represent loss of employment for 696,000 employees. He also suggests that output per man in the U.S. will rise at the rate of 2.4 per cent a year. This, in turn, means that "1.6 million more jobs will have to be created merely to offset the net effects of one year's change in average output per man." Consequently, it would follow that 696,000 jobs represent an output change of about 1 per cent. If the men freed from employment as a consequence of a free-trade policy of the extent suggested above, i.e., 4.0 billion dollars expansion in imports offset by some, but not equivalent, expansion in exports, were to be re-employed elsewhere only about 1 per cent increase in production would take place. This is the case for the United States. The gains would be slight indeed and would occur only once.

Similarly, the gains to Canada from more liberal treatment of manufactures imported from Canada by the U.S. could not be very great as far as over-all increase in productivity is concerned. For one thing, the figures quoted from Professor Salant's paper refer to the industry in the U.S. where greatest changes in the export of employment would occur. On average the results would be about one-half as great if all industries are included in the estimates. It should be recognized that international trade is more important to Canada than it is to the United States. However, since the U.S. takes 60 per cent of Canada's exports, 15 per cent of which is manufactures, and it is only in exports of manufactures that Canada's gain could come, the benefit in employment and in productivity to Canada arising from a generalized decrease in U.S. import duty levels would have to be slight. The improvement in economic position of persons associated with manufacturing in Canada would be partially offset by the worsening of the position of interests vested in export of the products of raw material exploitation if the increased employment in manufactures came to an already fully employed economy, or the U.S. lessened its imports of commodities other than manufactures due to trade balance adjustments. Professor Salant is concerned with the welfare implications for employed groups within the U.S. of trade liberalization. He suggests that governmental aid would need to be given to displaced employees of import-competing industries. Would not similar vexing welfare implications exist, although not necessarily inspiring political action, for Canada, if a radical altering of production and trading patterns took place?

As a matter of fact, Professor Salant's figures on the changes in employment which accompany the business cycle in the U.S. might be used and interpreted for a Canada in which manufacturing industry, with its cyclical instability, acquired increased importance. Perhaps not only extra adjustment in raw material production, due to U.S. import restrictions in time of low U.S. demand, but also similar adjustment, in magnified volume, in manufacturing production would aggravate the business cycle for Canada after trade liberalization.

One of the difficulties which lies in Professor Salant's calculations and in my usage of them here is associated with an explicit assumption which Professor Salant makes. This is the assumption that increases by other countries in exports to the United States as a result of U.S. import trade liberalization are not made at the expense of exports from those countries to still other countries or at the expense of domestic use of goods and services in the exporting countries. In fact, the assumption seems to be that the U.S. exports employment to countries with unemployed resources. The expansion in spending in those countries becomes for the United States a foreign repercussion effect and that effect varies between 9 per cent and 110 per cent of the net increase in foreign dollar earnings among the U.S. industries. If, however, full employment exists in the foreign countries at the time of the trade liberalization, price effects would add to the impact on U.S. exports and employment and would lessen the consequences for the United States, as far as employment is concerned, of the import liberalization program. Both Professor Salant's estimates and my use of them would be vitiated.

In fact, the role of free international trade in promoting superior resource allocation in the world is important and worthy of continuous consideration. Of at least equal importance are the problems of political security as a basis for trade policy, as Professor Thorp has so ably demonstrated, and the problems of economic instability and economic growth, with which these papers deal only in a peripheral way. It may be that a selective trade restriction policy protects a nation's security, guards it somewhat from cyclical instability, enhances the rate of economic growth, and distributes the benefits of economic production among the people on a more nearly even basis than does free trade. The difficulty, of course, lies with the word selective.

REFORMING THE TAX SYSTEM

SOME PROBLEMS IN THE INCIDENCE OF THE CORPORATION INCOME TAX

By CARL S. SHOUP
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The task of ascertaining the more important economic consequences of a tax of general scope such as that on corporate profits is now clearly recognized to be huge, complex, and altogether of quite a different order from that of determining the major effects of a single-commodity tax like that on cigarettes or distilled spirits. Piecemeal approaches to the corporate income tax problem will have to accompany broad theoretical forays for some time to come, until it becomes much more evident where research can be most fruitfully concentrated. Indeed, we can even profit from further discussion of the question: Just what is the subject of analysis? Where, for example, does the analysis of tax effects end and that of monetary policy take over? The present paper attempts to contribute something through the piecemeal approach; it offers a brief discussion of five subissues within the general field comprised by the heading: incidence of the corporation income tax.

First, the single excise tax of traditional incidence theory is contrasted with the corporate profits tax with respect to the kind of economic consequences that most interest the legislator and economist. The focus of interest changes as we move from one tax to the other.

Second, the two types of tax will be compared with respect to the immediate problem they pose for the business firm. In both cases the firm is put under pressure to react without delay to the new tax, but the area of reaction, so to speak, differs in the two cases,

Third, the observations on these two points lead naturally to the question of what it is we wish to study under the corporation income tax. The matter of terminology with respect to shifting and incidence is briefly reviewed and a suggestion added to the already long list on this score.

Fourth, some comments are offered on recent interpretations of the data on corporate profits, 1929 to 1955, as a percentage of net worth and as a percentage of sales.

Finally, attention is called to the increasing effect of a rise in the profits tax as the rate rises. A ten-point increase from, say, 20 per cent to 30 per cent is seen to be of much milder consequence than a ten-point increase from, say, 50 per cent to 60 per cent.

An imperfect market is assumed throughout, in which the taxed business concerns consciously set prices on their products, and with an eye to what their rivals may do. This assumption is necessary in view of the fact that the bulk of the corporation tax in the United States is paid by relatively few large firms. A study of the consequences of the corporation income tax is primarily a study, in the first instance, of the reactions of large firms.

I

When a substantial tax is imposed on a single commodity, e.g., cigarettes or distilled spirits, the interest of the legislator centers on the change in price of the taxed article compared with the size of the tax. He wants the price to rise by the amount of the tax.

The legislator is chiefly concerned to avoid gross inequity to factors that can migrate, if at all, from the taxed industry only to one that pays them less. This inequity may diminish as long-run developments take place, but the legislator is not prepared to dismiss as unimportant the hardships of forced migration. The easiest test to apply as to whether hardships have occurred, or will shortly occur, is the rise in price compared with the tax. Under perfect competition, the price rises by the full amount of the tax only if the demand is perfectly inelastic, or if the supply is perfectly elastic.

If the supply is perfectly elastic, migration of factors occurs, but without hardship; perfect elasticity implies that an alternative occupation paying the same compensation is readily available.

At the other extreme, if the price of the taxed article does not rise at all, either the demand is perfectly elastic or supply is perfectly inelastic. In neither case is the result acceptable to the legislator. If the demand for the taxed article is perfectly elastic, the tax must be too narrowly based to accord with elementary concepts of nondiscrimination, even if factors do not suffer much because the supply is very (though not, of course, perfectly) elastic; and the revenue yield may be meager. On the other hand, a perfectly inelastic supply usually connotes long-term investment commitments, and the imposition of the tax then appears too much like changing the rules of the game after the players have hazarded their stakes.

Thus, under a single-commodity tax, the legislator is much less concerned about inequity among consumers than he is about possible hardship to producers. This attitude has been evidenced in the United States by the refusal of Congress over the past forty years or so to tax cigars, pipe tobacco, and snuff at more than light rates, while taxing cigarettes heavily; the first three of these commodities represent industries that have been declining, at least relatively, while the cigarette industry has

been expanding vigorously. As to consumers, the legislator reasons that under a single-commodity tax, like that on cigarettes or liquor, the burden is spread widely and lightly compared with the burden that might be concentrated on the producers of the taxed article. Still other criteria are of course in the legislator's mind, but concern over the fate of the producers is one of the most important.

The tax economist, it seems, is more likely than the legislator or even the general public to be worried over the unreasonableness of asking smokers and drinkers to supply public services to nonsmokers and nondrinkers.

In any event, to both the legislator and the economist the single most interesting statistic under the one-commodity tax is the change in the price of the taxed article. The macroeconomic changes resulting from such a tax are usually ignored, and usually must be, if research is to be concentrated where it will pay the most. The alternative taxes employed, or dispensed with, or the adjustments made in government expenditure can be assumed to exert only a mild, widely diffused effect, unless it is stipulated that one excise tax is being replaced by another. Any change in distribution of disposable private income will be concentrated in a small group if producers of the taxed commodity suffer or will not be large for any one person or family if consumers suffer.

Under a tax of general scope, the focus of interest regarding hardship moves away from factors peculiar to one industry; hence away from changes in prices of commodities—at least relative changes. Migration of factors may indeed be forced by changes in relative prices under a general-scope tax, but it is not commonly thought to be important in amount or serious for any one industry. For one thing, the rate of a tax of general scope is not likely to be changed by a substantial percentage of the base at any one time. Even when such a tax is introduced, the change from zero rate is usually moderate compared with what is commonly seen under a single-commodity tax. Moreover, migration from one industry to another under the impact of a tax of general scope implies that as an offset to particular hardship in one area or industry there is a relatively fortunate area or industry elsewhere. Finally, the problem of interindustry migration under the pressure of a general-scope tax on producers is too complex for legislators and economists alike; they are relieved by the thought that under such a tax factors have virtually no tax-free occupation to which they may resort.

The focus of interest moves to changes in distribution of real disposable income among broad income groups or wealth groups and to changes in the rate of growth of the economy.

It moves to changes in distribution of real disposable income because of the possibility, easily envisaged, of a more or less general increase in prices of consumers goods while factor incomes remain unaltered (assuming that monetary conditions permit a general rise in prices), compared with the alternative possibility of a non-general fall in factor disposable incomes, the prices of consumers goods remaining unaltered (reference here is to a corporation income tax). The focus of interest moves in this direction because final conclusions useful to policy-makers must, with respect to a tax of general scope, take into account accompanying changes in other taxes or in expenditures or in government debt or cash balance.

The focus of interest includes changes in the rate of growth of the economy because general-scope taxes can be seen to differ with respect to whether they place some restraint on investment spending more than on consumer spending.

TT

Once the scene shifts from that of an excise tax on a single commodity to that of a tax of general scope on one type of input, the kind of decision that the tax forces on the business firm changes. Under the excise tax the immediate problem for the firm is that of pricing the product and adjusting the volume of production. The tax is usually far too large, compared with profit, to permit of any delay in adjusting price and production; indeed, the tax commonly far exceeds profits. The rate of employment of all factors engaged by the firm will be affected. But under the impact of an increase in the rate of a general tax on profits of corporations, even a substantial increase, the immediate focus of decision making is no longer on pricing. The change in tax, when expressed as a percentage of sales, is usually small enough to induce the firm to defer considering a change in its long and complex list of prices of its many products until an accumulation of other factors outside the tax field forces a revision. Failure to take price action immediately will not be disastrous, as it might be under an excise tax.

The corporation profits tax does, to be sure, strike directly at some short-run costs, but they are probably not important save in exceptional cases. Imputed interest on equity capital tied up in inventory is one possibility, but only to a limited degree. The larger part of such imputed interest is fixed in the short run, in the sense that the firm will for the time being accept whatever return can be obtained on it, since liquidation of all capital embodied in inventory would bring the business to a halt, reducing to zero the return before depreciation being earned on the physically long-lived assets.

There is, however, a class of decisions that is likely to be affected almost at once when the rate of the corporation income tax is changed.

Projects for capital outlay are continually being formulated and reviewed within the large corporation, both for expansion of the firm, and for cost-saving ("modernization"). The board of directors or the executive officers to whom they have delegated the power of decision making with respect to large outlays on capital goods come under pressure to review the cut off point on the list of projects available. If the firm has been embarking on capital outlays only when its engineers convince the board that a post-tax profit of, say, somewhere near 15 per cent will be earned on the outlay, and if a corporate profits tax is raised from 30 per cent to 50 per cent, the board must decide whether the cutoff point, which had hitherto been at 21.4 per cent in terms of pre-tax return, must now be moved up to 30 per cent. (In general, if r is the prescribed rate of post-tax return on investment; if x is the rate of tax on profits; then the pre-tax rate of return on investment, y, that is needed to produce the prescribed post-tax rate

of return is
$$\frac{r}{1-x}$$
.)

Investment expenditure plans concerned merely with replacement will also be reviewed, of course, in the light of the new tax rate, but in the physically expanding and technologically advancing economy of the present, the most significant impact will presumably be on the decisions for expansion and modernization, so far as those aims can be distinguished from replacement.

III

The focusing of the interest of both the legislator and the business firm on change in price, under a single-commodity tax, suggests that the traditional use of the terms "forward shifting" and "backward shifting" may usefully be continued in analyzing such a tax, as also the term "incidence." "Shifting" and "incidence" carry the same message; "shifting to" implies "incidence on," when the final stage of "shifting" that is under consideration is reached. The word "final" is to be taken in the practical sense of the limits of our interest, in view of the difficulty of getting further information of much less importance. Thus repercussions beyond the immediate factor markets are ignored and, on the other side, repercussions beyond the consumer market.

With respect to the broad-scope taxes—at least the corporation income tax—where the effect on volume of investment spending is the immediate phenomenon of interest rather than price changes, the traditional connotations of incidence in the single-commodity-tax sense seem not very helpful. The term might be dispensed with altogether in analyzing a tax of general scope, but a preferable course appears to

be that adopted by Professor Musgrave, who employs it to indicate change in distribution, by income size, of individuals or families (ex consumption of goods supplied free by government), the income in question being that available for private use. To employ the term incidence in this same sense for a tax on a single commodity has the virtue of consistency, but implies an arduous search for changes scattered too thinly over too wide an area. Perhaps the term incidence standing by itself might be restricted to analyses of single-commodity taxes (or, more generally, partial-equilibrium analysis), so that it would mean the change in price of factors or product (to the consumer level), for reasons given above; and, in analysis of general-scope taxes, the word might always be used with one of the modifiers suggested by Professor Musgrave: "differential incidence," "balanced-budget incidence," and so on. It would then be understood that the word incidence addressed itself to a different kind of phenomenon under the broadscope tax from that under the excise tax. To discard the word incidence entirely would be to narrow an already deficient technical vocabulary. Anyway, the term has stayed with us despite repeated suggestions from high authorities that only "effects" should be referred to. The word is a fixed asset, apparently, and we might as well get what quasi-rent we can from it.

A change in the rate of a broadly based tax requires changes in other economic policies. Replacement of the corporation income tax by a sales tax might involve a change in monetary policy if certain goals were to be met respecting maintenance of a stable price level and employment. Whether the end result were to be termed an effect of repealing the corporation income tax or were described as the consequence of a combination of measures would depend on the extent to which the other measures were regarded as set in advance, simply to be triggered by the repeal of the corporation income tax.

The policy-maker must have some idea of what these complementing changes need to be and the possibility of reaching the goals he has in mind before he makes a decision. Yet obviously one may study the effects of a repeal of the corporation income tax without a full-scale analysis of the complementing changes and the net result. Only if he professes to guide policy, without having considered the complementing changes, is he open to criticism on the grounds of misleading his audience. Meanwhile, the study of partial results, of tendencies, will be fruitful. To condemn limited studies of tendencies on the grounds that a full-scale answer is needed for decision purposes would be to risk learning nothing. The point is self-evident, yet may deserve to be reenforced by a simple analogy. If the driver of an automobile refuses to

¹ Richard A. Musgrave, The Theory of Public Finance, pp. 207-08.

stop when hailed by a patrol car, the police sometimes give chase and the result occasionally includes a collision with an innocent party. A study of the results to be expected if police cars repealed or modified the custom of chase could start with an estimate of the benefits to third parties, even though the policy should not be adopted without some research on the efficacy of alternative methods of apprehension and the dangers that they in turn would present for innocent bystanders.

IV

Before the brief digression into terminology, it was stated above that the boards of directors of large corporations in industry and trade or their delegates in the matter would have to decide whether to raise the cutoff point on investment projects, measured by pre-tax return on investment, if the rate of the corporation income tax were increased.

At the one extreme, the corporate decision-makers might be considered as adhering to a fixed post-tax percentage return on investment, even if the consequence were a sharp decline in the amount of their investment spending. Such action would indicate an almost perfectly elastic supply of funds within the corporation for modernization and expansion of these large industrial and trade corporations, in terms of post-tax rate of return on investment. The directors may, under this supposition, be envisaged as willing to increase or decrease dividends or cash and security holdings of the corporation to accord with the amount of investment projects available that in their opinion are likely to earn at least, say, 15 per cent post-tax. They are also willing to go to the market for funds, if need be, and whether they have to pay 3 per cent or 4 per cent or 5 per cent does not, under these assumptions, concern them much. The 15 per cent required post-tax return, or whatever the figure may be, reflects largely a loading for possible mistakes in the engineers' estimates, for assuming the responsibility of approving the venture, and for other imponderables. Additional shares of the company's stock may be sold to raise money for this investment spending, but most of the large corporations may be presumed to have enough cash flow from depreciation and post-tax profits so that, with borrowing when needed, they are able to embark on all the investment-spending projects that promise to yield the target rate of post-tax return.

This set of assumptions, it will be noted, implies that little or no influence on the rate of investment spending by large corporations in industry and trade is exerted by changes of the ordinary magnitude in the long-term rate of interest.²

² The case for attributing much more significance to the rate of interest and to the prices at which corporate equities can be sold is well put by B. U. Ratchford and P. B. Han, in "The Burden of the Corporate Income Tax," Nat. Tax J., Dec., 1957, pp. 319-22.

At the other extreme, it may be supposed that the officers of the typical large corporation in industry and trade approve the investment projects its engineers submit to them, up to the point where the spending would either endanger maintenance of whatever conventional dividend policy the corporation may have established, or require substantial appeal to the capital market. A minimum post-tax return is of course required.

According to this estimate of corporate behavior, the supply of funds within the corporation for spending on investment projects in these large firms in industry and trade is almost perfectly inelastic with respect to post-tax return, above the minimum. This assumption implies, for example, that a board of directors may be turning down investment-spending projects that are estimated by the corporation's engineers to yield, say, 20 per cent post-tax when the corporation could be borrowing at long term for, say, 4 per cent. In fact, such an attitude does seem to have prevailed during part of the postwar period in some corporate circles.

These two extreme sets of assumptions are set forth here because they illustrate the problem of interpreting the historical record of corporate profits from the twenties to the mid-fifties.³ During that period the marginal rate of the corporation income tax increased for the larger corporations from 12½ per cent to 52 per cent. As it turned out, corporate post-tax profits in industry and trade were roughly the same in the later period as in the earlier, if computed as a return on book value of net worth, but they declined appreciably as a percentage of gross receipts. Two recent analyses of this record—one by Clendenin⁴ and the other by Thompson and Silberman⁵—reach diametrically opposed conclusions with respect to the consequences of the corporation income tax. It may be inferred that the conflict of conclusions is traceable to an implicit use of one or the other of the extreme sets of assumptions just described concerning the supply of funds available for investment spending by large corporations in industry and trade.

The Clendenin argument is that the unchanged ratio of post-tax

stream of argument.

⁵ Edward T. Thompson and Charles E. Silberman, "Can Anything Be Done about Corporate Taxes?" Fortune, May, 1959, pp. 121-24, 260-68.

³ The rate of the corporation income tax for the income years 1922 through 1929 was: 1922-24, 12.5 per cent; 1925, 13 per cent; 1926-27, 13.5 per cent; 1928, 12 per cent; 1929, 11 per cent. For the income years 1946 through 1959 the marginal rate of the corporation income tax (excluding the excess profits tax of the Korean war period) was: 1946-49, 38 per cent; 1950, 42 per cent; 1951, 50¾ per cent; 1952-59, 52 per cent. For large corporations the marginal rate has been only slightly more than the average rate. See Statistics of Income, historical tables of rates.

Income, historical tables of rates.

*John C. Clendenin, "Effect of Corporate Income Taxes on Corporate Earnings," Taxes, the Tax Mag., June, 1956, pp. 389-98, 418-19. Conclusions similar to Clendenin's are reached by Eugene M. Lerner and Eldon S. Hendriksen, in "Federal Taxes on Corporate Income and the Rate of Return on Investment in Manufacturing," Nat. Tax J., Sept., 1956, pp. 193-202. Certain differences in coverage and definitions do not affect the main stream of argument.

profits to net worth indicates that the increase in the corporation income tax has been "passed on to the firms' customers in selling prices (or, infrequently, to their suppliers and employees),"6 and that the falling ratio of post-tax profits to receipts can be accounted for by the facts that "greater turnover efficiency has made possible a greater ratio of sales to assets," while the ratio of assets to net worth was as large in the later period as in the earlier, and "an increased use of subcontracting and parts suppliers has resulted in a still further increase in the ratio of sales to assets." Meanwhile, "the profit percentage on corporate net worth has not been impaired; it remains adequate as compensation for corporate capital. . . . "8 This line of argument, which Clendenin develops with due caution and with much more supporting analysis than can be reproduced here, is consistent, I infer, with the set of assumptions suggested above concerning perfect elasticity of supply of funds for the spending in question, within the range of spending shown on the record. Clendenin deduces, rather, that corporations have been able to raise their prices to recoup the increase in tax. I should prefer to think of the recoupment as consisting of less spending on investment projects than would otherwise have occurred—a demanding of a higher pre-tax return. For reasons suggested above, it is not saying anything of definite significance with respect to recoupment of tax burden to say that, in a macroeconomic setting, sales prices are raised. Indeed, emphasis on shifting through price may lead to what seems to be a mistaken conclusion that, as a corollary of the corporations' ability to shift the tax through higher prices, "the tax as now constituted does not . . . inhibit growth." If the present inferences are correct, the maintenance of an "adequate" post-tax return on net worth, coupled with a rise in the corporation tax rate, implies that a virtually horizontal supply curve is cut by a demand curve (reflecting the investment projects submitted by the engineers) sloped in between the extremes, and moved downward and to the left by the rise in the corporate income tax (alternatively, the rise in the tax rate may be represented by an upward movement of the horizontal supply curve).

The Thompson-Silberman analysis of the past four decades of corporate profits looks first to the declining ratio of profits to sales and from that concludes that the increase in corporate tax rate has not been passed on. ¹⁰ Standing by itself, this argument could carry little weight, but in a sort of postscript the authors deal with the stability of the ratio of post-tax profits to invested capital. The concomitant decline

⁶ Clendenin, loc. cit., p. 391.

⁷ Ibid., p. 395.

⁸ Idem.

⁹ Ibid., p. 392.

¹⁰ Thompson and Silberman, loc. cit., pp. 122-23

in the capital-output ratio is attributed by them in part to a "shortage of capital," and they deduce that insofar as the decline in the capital-output ratio has been due to "a shortage of capital, the rate of return on investment would have risen even in the absence of a tax."

The argument seems to imply the kind of internal capital rationing implicit in the second set of extreme assumptions given above. The internal flow of funds, coupled with a modest appeal to outside markets, was not large enough, we may infer, to cover all the projects that promised to yield the same pre-tax returns as in the twenties. The cut-off point was moved higher, not because of the rise in the corporate tax rate, but because of a shortage of capital. If the tax rate had remained at low levels, the same new high pre-tax rate of return on investment spending would have occurred in the fifties, and corporate owners would have been the direct beneficiaries of the low tax rate.

Although neither of the extreme, and opposed, conclusions summarized here needs to be accepted if some intermediate hypothesis is thought nearer the truth, the fact is that both have some evidence to support them. The rationing of capital expenditures to the amount of internally generated funds is a hypothesis not completely at variance with corporate practice; on the other hand, it seems rather too much of a coincidence for the pre-tax return on investment to have risen, owing to the capital shortage, to just the level that would have been reached if the aim instead had been to keep constant the post-tax rate of return, in the face of the increases in the corporate tax rate. The opposite theory, though it seems at first to be a more sensible interpretation of the facts, does involve a rather strong assumption about the willingness of corporate boards and executives to expand and contract the capital flow, by changes in dividends and by varying appeals to the capital market, for funds enough so that all projects satisfying the fixed post-tax target can be covered. Moreover, the assumption that the target itself should remain unchanged over three or four decades needs supporting.12

It is tempting to say simply that some intermediate assumption is

[&]quot;Ibid., p. 260.

"See also Arnold Zellner, "The Corporation Income Tax in the Long Run: A Comment,"

J.P.E., Oct., 1958, pp. 444-46; and Paul G. Darling, "Income Taxation and Dividend Income," Tax Revision Compendium, Committee on Ways and Means, 1959, Vol. 3, pp. 1579-1604. In addition, there has just come to my attention the research findings of Peter Briant, Marian Krzyzaniak, and Richard A. Musgrave, "An Econometric Approach to the Incidence of the Corporation Income Tax, A Preliminary Report on a Research Project" (mimeograph), 84 pp., Aug. 31, 1959. This study indicates that, for a sample of fifteen large firms characterized notably by administered-price policies, "an increase in tax rates has tended to reduce the gross rate of return, rather than to raise it" (p. 12). This surprising result is discussed at length by the authors; perhaps we may conclude that we have much more to learn about the factors that influence the decisions of those who set the price policies in these large corporations, or that some nontax influence not allowed for in the study was at work, or that, indeed, an explanation is supplied by the "expense effect" ("changes in the rate of tax are related positively to expenses which, in considerable part, did not lead to an immediate rise in income," p. 12), the net result then being, under this interpretation, net shifting of 20 per cent of the tax.

nearer the truth. But in further research along these lines, another perplexing factor needs to be kept in mind. Investment decisions are affected, not by the tax rate now in force, but by the tax rate that the investment decision-makers think will be in force over the life of the investment. At the end of the war, most investment decisions in large corporations in industry and trade were probably made on the assumption that the corporation tax rate would decline in the decade to come from the unprecedented peacetime level of 38 per cent. Gradually, that expectation vanished as the tax rate continued to rise. Still, the 52 per cent rate first effective in 1952 was probably itself regarded as temporary, like the reimposed excess profits tax. This expectation, too, has probably faded by now; for the past year or two or three, most investment spending by large corporations in industry and trade has very likely been undertaken on the assumption that earnings from the investment would be taxed at something like 52 per cent over the entire life of the investment. Thus we may say that the 52 per cent rate has been in effect, on the demand side, economically speaking, only since 1956 or 1957.

Similarly, if the tax rate were now to be lowered substantially in an effort to promote investment and growth, some five or ten years might have to pass at this new low rate before it was accepted as something that could be counted on. To the extent that this conclusion is valid and on the assumption that the high rate of tax has in fact gradually caused the rejection of more and more investment projects, the level of investment spending by large corporations in industry and trade may in any case decline somewhat in the years ahead, or at least not rise appreciably. But of course the corporation tax rate is only one among many powerful forces playing on the stream of investment decisions.

Implicitly, the analysis above says that the loss-offset provisions that have been in the federal income tax law over the period in question have not been of major influence in determining the investment decisions of large firms in industry and trade. This is an assumption that may well be questioned, but my impression is that a large concern does not undertake a sizable investment until it is rather sure that the investment will be profitable; if the prospect of incurring a loss is acute enough to cause the board of directors to think about it much, they postpone or abandon the investment project. This does not deny the great importance of the loss-offset provisions for new firms, for small firms, or for any firms in particularly risky industries.

V

In an illustration given above, it was seen that an increase in the rate of tax from 30 per cent to 50 per cent would require an increase in the pre-tax rate of return from 21.4 per cent on the investment to

30 per cent, if a post-tax return of 15 per cent on the investment were to be maintained. Another 20 points increase in the tax rate would require a much bigger jump in the pre-tax return on investment, to continue the 15 per cent post-tax yield. The pre-tax return on investment would have to rise to 50 per cent per annum. The first 20 points of increase in the tax rate, from 30 per cent to 50 per cent, necessitate an increase of 8.6 percentage points in the pre-tax investment return. The next 20 points rise necessitates an increase of 20 points instead of 8.6 points in the pre-tax investment return. As a higher pre-tax return is sought to maintain a fixed post-tax return in the face of an increase in the tax rate, the increment to the pre-tax return is itself struck by the tax, and the higher the new tax rate, the more of the increment that goes to feed the tax rate rather than recoup what the rate took of the former profits. That is, not only does the pre-tax rate of return

$$(\frac{r}{1-x})$$
 that is necessary to obtain the fixed post-tax rate of return,

r, increase as the tax rate, x, increases; it increases at an increasing rate. At a tax rate of 30 per cent, a one-percentage-point rise in the tax rate requires an increase (approximately) of 31/100 of a percentage point in the pre-tax rate of return. At a 52 per cent tax rate, a further one point rise in the rate requires an increase of 65/100 of a point in the pre-tax return on investment. At a tax rate of 70 per cent, an increase of 1.67 percentage points in the pre-tax return is required to recoup one point more on the tax rate. At a 90 per cent tax rate, one more point on the tax rate requires an additional 15 points on the annual rate of pre-tax return on the investment. At a 95 per cent tax rate, the required pre-tax return on investment (to net 15 per cent) is tending to increase by 60 percentage points for a one point increase in the tax rate.

The pre-tax rate of return required to maintain a fixed post-tax return of 15 per cent a year on the investment is shown here for various levels of tax rate:

If the corporation income tax were reduced from its present level, an initial 10-point decrease, from 52 per cent to 42 per cent, would be more effective than a succeeding 10-point decrease, in the sense that it would lower the required pre-tax rate of return by more percentage points than would the second 10-point drop. But the government loses more revenue, on a given volume of investment, from the initial 10-point drop. However, the volume of investment would increase as the rate fell. The question is whether this increase in investment would be greater for the initial 10-point decline (with its accompanying large decline in the pre-tax rate of required return) or for the second 10-point decline, which brings with it a smaller drop in the required pre-tax

Rate of tax (x) on profit Percentage	Required annual pre-tax percentage return on investment, to obtain 15 per cent $(=r)$ post-tax return:
	$\frac{r}{1-x}$
20	$18.75 = \frac{r}{.8}$
30	$21.43 = \frac{r}{.7}$
40	$25.00 = \frac{7}{.6}$
50	$30.00 = \frac{r}{.5}$
52	$31.25 = \frac{r}{.48}$
60	$37.50 = \frac{r}{.4}$
70	$50.00 = \frac{r}{.3}$
80	$75.00 = \frac{r}{.2}$

rate of return, but which might, for all that, uncover a larger volume of investment spending than the initial change. Combining these various considerations, it can be seen that the question is open, whether an initial 2 billion dollars (say) of revenue loss from lowering the corporation income tax rate would uncover more, or less, investment spending by large corporations in industry and trade than a succeeding 2 billion dollars of loss. Tax policy should not be decided simply by comparing the effects of equal-yield increments or decrements, but this is the kind of question that will usually be posed in the first instance.

A PROGRAM FOR FEDERAL TAX REFORM

By DAN THROOP SMITH Harvard University

Federal tax reform is urgently needed. It is recommended by taxpayers' groups and by economists. It is high on the list of proposed action by political leaders.

The peculiar and perverse character of our tax system is dramatized by the fact that it was cited by Khrushchev as evidence that we fail to use incentives to increase production to the extent that they are used in Communist Russia. It is indeed ironic that the Soviet leader in speaking of incentive should note to President Eisenhower that "in many ways you stifle it."

A few major areas stand out for reform in virtually all proposals. Reduction in the rates of the individual income tax together with broadening of the base and closing of loopholes to remove inequitable and uneconomic tax privileges stands at the top of most lists. Liberalization of depreciation allowances on machinery and equipment together with a tightening to deny capital gains treatment to profits from any too-rapid depreciation comes second. A reform of the entire capital gains area is a third major subject. In addition to those three broad areas, a thorough reform should include: effective taxation of co-operatives and mutual financing companies to give substantial equality with ordinary taxable enterprise, a rationalization of the present haphazard excise tax system, a tightening of estate taxation to remove the present inducement to leave property in trusts extending over many years together with a reduction in rates, and a review of depletion allowances.¹

The structure of a tax system may be almost as important as the total level of taxation. With sufficient reform, we could probably support appreciably higher tax burdens than we now have, if that is desirable or inevitable. Without it, we shall reap accelerating social and economic damage from our systems. In various ways our present structure violates the three requisites of an acceptable tax system: fairness, minimum restraint on economic growth, and simplicity.

We shall not argue here the relative merits of private and government

¹ In a brief presentation, a complete program must inevitably be presented more in the form of assertions than as conclusions from reasoned analysis. Though this can be a matter of some embarrassment to the author, it should serve to increase rather than diminish discussion of the proposals. Most of the more familiar proposals for tax changes are noted here, along with other proposals which are made though they are not familiar. The principal reasons for inclusion or rejection are given, but the analysis is perfunctory. A more complete analysis is contained in a forthcoming book on the same subject.

spending. Though taxation by itself is repressive, wise government expenditures may be highly productive; in fact, some government expenditure provides the essential base for the very existence of our society and economy. But increased government expenditures are not necessarily good, nor will they necessarily be any wiser than private spending. The defects of education, for example, seem mainly to arise from what are at last coming to be recognized as wrong emphasis on "life adjustment" courses and egalitarian standards of performance rather than from inadequate appropriations. Too liberal government assistance may undermine personal responsibility and initiative and even draw to a community recipients who are at best parasitic. Even if one deplores the frivolity of much private consumption and favors the expansion of some government programs—and there are probably few who do not-one may still regret the general scale of public spending and oppose increases in the aggregate level. The harmful effects of taxation as such must be matched against the presumably good effects of the expenditures which they finance.

A self-balancing tax reform could be developed, but any major tax reform program which is politically realistic probably would involve some immediate loss of revenue, though it would so improve the climate for economic growth that it would doubtless produce higher revenues within a short time.

Viewed abstractly, a surplus or deficit of 1 or 2 billions of dollars is relatively small in an economy of almost 500 billion dollars and a federal budget of 80 billion; it is no more than the margin of error in the best of estimates. Logically it should be regarded as a minor factor in comparison with other forces involving much larger expansions and contractions of credit, shifts in private spending, or cost increases. Still the immediate revenue effects may govern the time at which major tax reform may be prudently undertaken.

The budget has a symbolic importance which transcends abstraction and logic. It is a symbol of fiscal responsibility both domestically and internationally. For too long, there was a presumption that a balanced budget would prevent inflation. We now realize that it will not. But the inadequacy of a balanced budget, or of fiscal policy generally, to prevent inflation does not mean that the budget position is unimportant. Though a small deficit arising from changing conditions or errors in estimates is no basis for alarm, conscious action to throw a budget out of balance is likely to be taken as a symbol of irresponsibility which cannot be justified even for so good a purpose as tax reform. This is especially true when other forces are unfavorable, as they now are.

The failure to remove the ceiling on the interest rate for the public

debt forces a reliance on short-term financing which in its actual impact may be quantitatively as important as a deficit of several billion dollars. Present restrictions on the interest rate make it almost inevitable that debt management will be inflationary. Until freedom is given for sound management, it is doubly important to keep the budget—the other area of Treasury impact—on a completely solid basis.

Attitudes towards inflation are also important. The country is now confronted with the realization that our creeping inflation has priced many American goods out of the world markets. Business, labor, and the public should expect to have some of the benefits of increasing productivity passed on to the consumer. Wage increases in excess of productivity increases are recognized as inflationary and unjustified. But national wage standards based on increased productivity in the most rapidly improving industries must lead either to inflationary cost increases in other industries or to widening disparities in incomes. It is not practicable or reasonable to have permanently wide wage differentials based on differences in the rate of technological improvement, increased mechanization, and capital investment in various industries. One can only hope that the benefits of the labor movement in furthering mass consumption, in opposing government ownership, and generally encouraging increased productivity will be matched by sound wage policy in the critical years ahead. The initiative for price reductions reflecting unusually high increases in productivity must come from business, but they should be expected by the public, with recognition that larger capital investments, which often are necessary for higher productivity, require sufficient profits to justify the investment.

The foregoing digressions suggest that tax reform, important though it is, should not be undertaken at the expense of even a briefly unbalanced budget, unless all other factors are favorable. One can only hope that room can be made soon for tax reform within a balanced budget or that inflationary forces will be so well under control that tax reform even at the cost of a temporarily unbalanced budget will be a sound and responsible act. Above all else, one must be reasonably sure that a budgeted amount for tax reform will not be diverted to other changes in the tax law which may have greater political appeal. With this background, we turn to the substance of reform.

Individual Income Tax Rates

The most important single reform is to reduce the excessive rates of the individual income tax and tighten the definition of taxable income to cut down on present abuses, legal and illegal, and assure more equal treatment of taxpayers.

Our present very high rates of tax were developed during the thirties and the World War II and Korean war periods. The circumstances involved a period of extreme economic egalitarianism in our dominant political attitudes (though the public opinion polls have indicated the belief that fair taxes on larger incomes should be much lower than they were in fact), a mistaken belief that Western civilizations had excessive savings (this gave an economic rationalization for confiscatory taxation), and the war periods when controls were widespread and limitations on individual income were but token sacrifices compared to those serving in the unpleasant parts of military life.

But the period of personal sacrifices has at least been suspended, and one hopes ended, some years ago. The controls have been dismantled in the interests of a free and dynamic economy. The fallacy of excessive savings and the mature economy has been exposed in both the more developed and the less-developed countries and recognized by both the public and economists, albeit grudgingly by a few of the latter. And with the general improvement in incomes through greater production, the egalitarian excesses of a quarter century ago are seen as more vindictive than rational. Most of those who still favor very high income tax rates as a matter of social philosophy have recognized that on balance they are bad because they distort personal and business decisions and lead to action and attitudes which may jeopardize the income tax itself.

It is manifestly not true, as is sometimes alleged, that high income taxation completely destroys incentive and brings economic growth to a halt. The nonpecuniary incentives for economic activity are numerous and powerful. The satisfaction of creative activity, power, status, leadership—all these can be realized in business. The pressures and disciplines within a large organization require continued effort and application, though the independent owner-manager of a company may slacken after he has realized his other goals. But pecuniary incentives are of some importance in all cases and repression of them cannot do other than repress economic growth. Moreover, damage from high taxes comes in more subtle ways than a simple lack of activity.

With high taxes, it becomes much more important to save a dollar of taxes than to earn another dollar of income. At a 90 per cent tax rate, it is ten times as important to save a dollar of taxes as to earn a dollar of income. This fact cannot do other than divert attention from production to tax minimization—an activity which involves perhaps

the most flagrant sort of conflict between private and social net products.

The effects of high taxes in freezing people into their existing employment because of the impossibility of making up invested pensions foregone are familiar.

High taxes seem also to make the public more tolerant of fraud and loopholes and the Congress more susceptible to pleas for new special relief provisions. We still have among most social groups in this country a feeling that tax fraud is morally reprehensible. This is a tradition as precious as it is rare in the world. Very high rates strain the integrity of individuals. The rates put a premium on subterfuge, on expense account living, and on all devices which may come within the letter though they violate the spirit of the law.²

As has been said many times before, our income tax has become a mass tax, not a class tax. Out of over 40 billion dollars estimated revenue for the current fiscal year, probably not over 800 million, or less than 2 per cent, comes from the rates above 50 per cent. In fact, only about 6 billion dollars, or one-seventh, comes from the entire range of progression above the basic rate of 20 per cent. By contrast, each percentage point on the basic rate involves 1.7 billion of revenue. Thus a reduction to 50 per cent at the top would cost not more than a reduction of one-half of one percentage point in the full scale of rates; a reduction of three percentage points in the full scale would cost almost as much revenue as the complete removal of all progression!

Problems of equity, economic policy, and politics intermingle in any consideration of rate reduction as part of tax reform. From the standpoint of equity, comparisons can be made in terms of changes in the amount of tax, in the rate of tax, and in net income after tax. The great misfortune and inequity in the period of increasing taxes occurred in 1932 when the normal tax was raised from 1½ to 4 per cent and the top bracket, presumably on the notion that rates should be changed proportionately, from 25 to 63 per cent. In terms of net income, this meant a reduction at the bottom from 98½ to 96 cents, or about 2½ per cent, while at the top the reduction was from 75 to 37 cents, or by more than 50 per cent. Since that date, subsequent increases have been tapered off at the top to avoid bumping into complete confiscation at 100 per cent. It was not adequately realized that, given a progressive

² An academic audience may be reminded of proposals to redesign university salary accounting to make part of a salary during sabbatical leaves qualify as a tax-exempt fellowship, of pretenses by which a part of home expenses are deemed to be professional office expenses, and of failures to remember that the cost of a wife's free trip provided in conjunction with a speaking engagement is part of a family's taxable income. These subterfuges should make us, with our relatively modest marginal tax rates, fully aware of the temptations and financial perversions open to high-bracket individuals with complicated activities.

structure, even a uniform increase in rates—that is, by the same number of percentage points—is progressive in terms of effects on net income; a proportional increase in rates is highly progressive; while a progressive increase in rates is likely to be confiscatory in its effects on net income. When rates are reduced, the converse is true and any appreciable reduction in the highest rates will have an effect on net income which could not be matched by the full removal of tax on the small incomes. The political arithmetic of taxation is built on different presentations of the effects of tax changes.

Since rate increases did not proceed on any logical pattern, real reform cannot be secured by reversing the historical increases. The best procedure is to set a goal of the most reasonable rate structure to meet revenue requirements, with minimum economic repression and distortions and maximum equity, and then proceed to it promptly or over a period of years as expanding revenues permit. There is no absolute standard for measuring total or marginal sacrifices from tax payments. Scientific analysis can give little help in reaching a consensus of popular opinion, which may intuitively take account of something like the economists' conflicting abstract concepts of equal sacrifice, minimum sacrifice, and proportional sacrifice.

The perverse effects of income taxation obviously increase as rates become higher. A 10 or 20 or 25 per cent marginal tax rate is not likely to decrease incentives or divert action into tax-saving maneuvers. Any rate above 50 per cent is likely to have a pronounced effect; the transition from keeping more than half to paying more than half can have a strong psychological impact. From the standpoint of fairness, high-bracket taxpayers have not only been denied the chance to share in increases in national income; their real net incomes have been irretrievably reduced over what they were in earlier years of lower taxes and lower income. By contrast, tax increases in the lower brackets fortunately have not prevented substantial general increases in real net income. Equity and economic policy thus both require disproportionate relief in the higher brackets.

Broadening the Tax Base

The reduction in individual tax rates should be accompanied by a tighter definition of taxable income to increase the fairness of the tax law and to provide revenue to offset partially the immediate losses from lower rates. The theoretical concept that income should be measured by changes in net worth plus consumption, though intriguing to some, is neither practical nor sensible for taxation. The net of the tax gatherer should not be cast so wide that it includes items which it is not feasible to tax nor within the popular concept of income. This limitation rules

out such favorite proposals as taxation of the rental value of an owner-occupied house as imputed income.

Tighter Standards on Expense Accounts and Other Fringe Benefits. Taxable income should include the value of new perquisites established primarily for tax avoidance but exclude conditions of employment and fringe benefits which existed before taxation was important or which have compelling nontax reasons. Thus the cost of payments of country club dues by an employer, travel expenses of family members except on long-term transfers, personal use of company transportation facilities and resorts, and personal entertainment under the guise of business activity should all be taxed to the individual beneficiary. By contrast, the value of meals in executive lunch rooms, the use of a company car for company business, not to mention well-furnished offices and secretarial assistance, should not be included in individual income. Expense account living may need additional controls, perhaps first by requiring segregation on a company's records of all expenses by and on behalf of individual employees. The variety of charges permitted under credit cards is an invitation to tax evasion; but the use of cards should facilitate audits. Taxation of the value of benefits to individuals is much more significant than denial of a deduction to employers; in fact, the denial of a deduction may not be appropriate if compensation, direct and indirect, is not unreasonable.

The travel expenses of professional people also require more intensive limitations. Travel to a resort or vacation area should not necessarily be made deductible merely by attendance at a convention or visits to hospitals, libraries, or short summer school courses. Travel expenses should be prorated if personal activities take any appreciable part of the time on a trip or disallowed completely if they take the majority of the time. Hotels which provide special rate cards to show that single occupancy of a room costs as much as double occupancy for the duration of a convention, thus making a wife's hotel bill deductible, should be held up to public ridicule.

Ultimate Denial of Deduction for State and Local Taxes. If the tax law were being developed anew, it would be preferable not to allow deductions for any taxes paid, federal, state, or local, except in computing net incomes on business activities. This would be a real simplification. It would help remove the present discrimination in favor of homeowners who can deduct their property taxes while renters have no deduction for any part of their rent. Unless very large reductions were made in the top brackets, however, total taxes might exceed or approach total income if the state and local taxes were not deductible. The disallowance of present deductions may be regarded as an ultimate

goal in a reform but equitable only in conjunction with a substantial reduction in high-bracket rates.

Removal of the "Sick Pay" Exclusion. The present sick pay exclusion should be repealed in the interests of simplicity and equity. The law was tightened in 1954 by the insertion of a \$100 weekly ceiling to prevent gross abuse of the existing provision for complete exemption of insured sick pay. It was also liberalized to remove discrimination against self-insured employers. It should now be repealed to remove the remaining petty abuses. The medical expense deduction gives what relief is necessary to extra costs of sickness; exemption of income is an inducement to malingering and not justified on grounds of fairness.

Maintenance of Split-Income Provision Unless Community Property Concepts Can be Ignored. The present split-income provision is justified only as a means to secure equality of treatment with the community property states. It would have been preferable to ignore that concept for purposes of the federal income tax, and it is hard to see what inequity there would be in achieving national uniformity in that way. The present split-income provision is capricious in giving relief to married couples in the middle-income brackets, with no relief at the bottom or top brackets. But it is vastly better than the alternative proposal for compulsory joint returns for all married couples. This would impose an annual progressive tax on marriages where both spouses have income. It is hard to think of a tax provision which would be more inequitable, immoral, and antisocial.

Denial of Interest Deduction. Deductions for interest are a source of continuing abuse. A few insurance companies show great ingenuity in creating special policies which are self-financing through deductions of interest on peculiar "loans" on the policy itself. The interest deduction gives a further benefit to homeowners with mortgages over renters. Enforcement of the disallowance on loans to carry tax-exempt bonds is difficult. Logically, an interest deduction is not necessary in computing personal income, as distinct from business income. The deduction might well be removed, as part of a general reform. This would substantially simplify the law.

Strict Examination of Charitable Contributions in Kind. The United States is conspicuous among nations for the extent of philanthropy. It is proper that our tax laws should be among the most generous in the world on charitable deductions. Abuse does exist, however, in excessive claims of value for gifts in kind, whether of art objects, business properties, or discarded furniture or clothing. A restriction of a deductible contribution to the cost to the contributor is appealing on grounds of equity, though it would not cover abuses in gifts of dis-

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carded property. On balance, however, the importance of philanthropy is so great that the present law, one may say regretfully, should be continued to allow deductions for fair market value but with strict standards of enforcement. There is too much room for collusion between donor and donees.

Removal of Tax Exemption for Future Issues of State and Local Bonds. Tax exemption of interest on municipal bonds has no more justification than the former tax exemption of salaries of municipal employees. Its inequity and its distortion of investment decisions have been thoroughly discussed. It should be discontinued on future bond issues. If necessary as a matter of intergovernmental relations, the federal government might make an annual payment equivalent to some stated fraction of interest paid, or some specified percentage of the loan, on future issues of taxable bonds. This could more than offset any increase in interest costs to the states and municipalities and still give a net gain to the federal government.

Maintain the Dividend-Received Exclusion and Credit. In spite of uncertainty about the incidence of the corporation income tax, some part of its aggregate burden rests on the corporation, thus making dividend income uniquely subject to some degree of double taxation. It is unsound economic policy, as well as unfair, to impose a tax penalty on the income from that form of capital which is most important for economic growth. The present relief, though small, is an important symbol of a reversal of the punitive attitude towards enterprise prevailing twenty-five years ago. The repeal of the relief would indicate a return to punitive and destructive taxation. Withholding of tax on both dividends and interest is desirable for the sake of equity and additional revenue, and the administrative problems probably are not insuperable.

Retirement Income Taxation. Though the present treatment of retirement income is not altogether logical or equitable, major proposed changes do not seem desirable on balance.

If a completely fresh start were possible, a better system could be devised. Social security benefits should be taxable. They became non-taxable only through an early ruling of doubtful soundness. Perhaps this could sometimes be reversed by statute if rates were reduced substantially. This would permit repeal of the cumbersome retirement income credit, now necessary to give substantially equal treatment to those who receive little or no social security benefits.

Employee pensions based on employers' contributions receive preferential tax treatment, but this is due to the difficulties and inequities

³ For a brief summary of the alternative methods of relief, see the author's statement in House Committee on Ways and Means, *Tax Revision Compendium*, 1952, pp. 1543-49.

in trying to impute to individual employees their appropriate shares of an employer's contribution to a pension plan with nonvested rights. Proposed deductions for contributions by self-employed people for their own retirement funds would present new complications and new discriminations against employees who do not in fact benefit from employee pension plans. There is no really good solution to this problem. It has been magnified by high tax rates. Hopefully, a reduction in taxes will minimize the sense of discrimination and forestall new complexities and discriminations.

The tax status of deferred compensation received under contracts is not clear, but deferral is increasingly common and apparently regarded as safe by many legal advisers so long as it is provided for in an original agreement and perhaps supplemented with some sort of continued potential services. The distinction between contracts originally providing for deferral and those where a previously agreed amount is later deferred seems unduly legalistic to many laymen, especially when the only conceivable reason for deferral is a large tax advantage. But the law should be made clear on this subject so that, if there is a benefit, it will be available to all. General availability of deferral, however, would give a distinct advantage to large well-established employers, publishers. and clients where the risks of loss under deferred payment are small. On grounds of equity and economic policy, an attempt should be made to restrict the use of deferred payment contracts, but the administrative problems are so formidable that action may be postponed with the hope that reduced tax rates, by reducing the advantages of deferral, will minimize the problem.

Depreciation

Our tax allowances for depreciation are among the most restrictive in the world. With the great need for increased efficiency and production, we can no longer afford to maintain our present restrictions. But liberalization to permit faster write-off should be balanced by tightening to make profits on the sale of depreciated property taxable as ordinary income, instead of capital gains, to the extent of any excess depreciation. The authorization of declining balance depreciation in 1954 and changes in regulations to reduce controversy and give greater emphasis to expectations instead of historical experience were important changes, but they were not sufficient to meet the new problems and challenges.

Many other countries permit deductions in excess of actual cost of some categories of depreciable property or large initial deductions in the year of acquisition. Such large allowances do not seem necessary in this country under present circumstances, nor does an adjustment to reflect an excess of replacement cost over original cost, important though the

problem of high replacement cost is in some industries. A faster recovery of original cost will help meet the problem of higher replacement cost as well as encourage and facilitate investment generally.

We cannot afford the immediate budget impact of complete freedom of choice on depreciation rates. The Canadian approach seems preferable. Broad categories of depreciable property should be established with statutory rates or lives somewhat shorter, perhaps two-thirds or three-quarters of the probable actual economic life in use. Taxpayers should be permitted to use even shorter lives if they can justify them on the basis of distinctive features in their own operations or expectations or, if they choose, to use longer lives. Since machinery and equipment are the most important forms of capital to increase productivity, the new approach might be confined to such investment at least at the start. Real-estate investments already have numerous tax advantages and are a source of a good deal of tax abuse, most of which would be removed by the repeal of the section permitting capital gains treatment of profits arising from overdepreciation and by other necessary changes to prevent avoidance of the ordinary tax as through corporate liquidations.

Faster depreciation will permit the generation of more internal funds for expansion and will permit outside financing on shorter terms, thus making funds more generally available. By permitting the recovery of capital more quickly when risks and prospects can be foreseen more clearly, it will also encourage the investment of such funds as are available.

A surprising controversy has developed among accountants over the proper way to present financial statements of companies using different methods of accounting for tax and book purposes. To avoid financial statements which contain accounts that are puzzling and in some respects misleading, it would seem desirable to permit new methods and rates of depreciation, including the declining balance method itself, only when it is used on a company's own books in ways that do not call for qualified certificates or special adjustments or accounts.

Capital Gains and Losses

The tax treatment of capital gains and losses involves matters of definition, holding periods, and rates. The definition should be drastically tightened, the holding period lengthened (if any change is made in it), and the rate reduced on bona fide capital gains on property held over five or perhaps ten years.

Though the concept that accretions to wealth represent income appeals to some theorists, it does not correspond to ordinary ideas of income. An increase in value developing over many years is ordinarily regarded as being embodied in the capital of which it is a part. A tax

on the gain, whether imposed during appreciation or on realization, is regarded as a capital levy by those subject to it and by many dispassionate observers.⁴

Realized capital gains are regarded as a special form of taxable capacity in this country. We might be better off from the standpoint of economic development if we had no tax on capital gains, and certainly a country primarily concerned with economic growth should be extremely cautious about imposing one. The full taxation of gains, even with the most generous and elaborate form of income averaging, would probably do more damage to economic development here and elsewhere than any other single provision of a tax law. A reduction by half, to a $12\frac{1}{2}$ per cent maximum, would do a great deal to thaw frozen investments and increase mobility of capital.

An extension of the existing provision for tax-free exchanges of residences and property used in trade or business to sales and reinvestments of securities deserves serious consideration. This rollover approach would significantly encourage investment and increase the fluidity of capital funds. If adopted, realized gains withdrawn from a capital fund and spent on consumption probably could and should be taxed at rates approximating ordinary income, subject to reasonable averaging.

But the definition of capital gains should be drastically tightened. Many things have been included in it which now bring the whole concept into understandable disrepute. Coal royalties, lump-sum withdrawals from pension plans, the gains from sales of life insurance policies (special institutions have been established to buy and redeem them), profits on quick sales of stock purchased under stock options, as well as the profits arising from excessive depreciation already discussed, should be excluded to increase the fairness of the law and to protect the integrity of the basically sound concept of capital gains.

There is little justification for a holding period as short as six months. Gains which develop and are realized in so short a period partake of trading profits which should be taxed as ordinary income. The short holding period does help to increase liquidity in the security markets, and that is desirable, but the disadvantages of lengthening of the holding period would be more than offset by the advantages of reduced rates on true long-term gains, and a combination of rate reduction and lengthened holding period would be both equitable and economically sound.

It would be a great simplification in the law if all corporate income and gains were taxed at the same rate. The special rate for capital gains of corporations is a relatively new addition to the tax law and does not

⁴A more complete discussion of this aspect of taxation is given in House Committee on Ways and Means, Tax Revision Compendium, 1959, pp. 1233-41.

arise from a need to recognize the difference in personal attitudes between income flows and capital accretions. The revenue gained from a repeal of the capital gains provisions for corporations could be matched by a reduction in the general rate of the corporate income tax. The idea is at least worth thorough consideration.

Co-operatives and Mutual Financial Organizations

The present tax treatment of co-operatives gives them an altogether unjustified advantage over their fully taxable competitors. Co-operatives are no longer small organizations for joint action by a group of neighbors. They are large business concerns forcing taxpaying companies out of business in many lines of industry because of their ability to retain all earnings tax free indefinitely. Under a series of court decisions, both the co-operatives and their members can be exempt from tax indefinitely if the right sort of certificates of beneficial interest are issued to members.

The appropriate change in the law would be to tax co-operatives at corporate rates on all net retained earnings. This would still give them a great tax advantage over other business in permitting deductions for cash distributions of profits to members in computing the co-operatives' taxable income. But it would give equal treatment on retained earnings for expansion, thereby removing the most unfair part of the tax discrimination against ordinary business.

Co-operatives argue that they should be permitted to retain earnings tax free for ten or fifteen years, treating them as revolving funds. This would continue the gross discrimination against regular business, which would also like to have tax-free retention of earnings for ten or fifteen years.

Savings and loan associations and mutual savings banks also have an unfair advantage over taxpaying commercial banks in that they can retain earnings, in the form of a "bad debt reserve," up to 12 per cent of deposits, thus permitting indefinite tax-free expansion. These mutual organizations also have grown into big businesses, as evidenced by their solicitation of deposits from large corporations on a national basis. They long ago ceased to be neighborly self-help associations. Their taxation should be brought more nearly into line with that of their taxpaying competitors.

Estate Taxation and the Taxation of Trusts

The present estate tax law almost forces people to leave estates in trusts for as many generations as is possible. Only one estate tax is paid, on the death of the creator of the trusts; the transfers to each succeeding life beneficiary and to the ultimate recipient of the body of the trust

is not subject to additional gift or estate taxes. The effect of this strong tax inducement for trusteed property means that capital is likely to become passive instead of active, and the intermediate beneficiaries are forced into the position of rentiers, even though they desire to be active businessmen. It is hard to imagine a more perverse feature of a tax law in a country which aspires to personal activity and dynamic capitalism.

It would be much better to include the capital value of each trust in the estate of each life beneficiary on his death, and reduce the rates of tax to bring in the same amount of revenue. This would restore activity to both capital and individuals. It will be opposed strongly by those who regard trusts as separate legal entities, which they doubtless are for various legal purposes, but which they do not need to be and should not be for taxation.

The tax law should be further amended regarding trusts to prevent the use of separate trusts for income taxation. Multiple trusts permit incomes to be broken into innumerable fragments, and if they run for more than ten years to be taxed as separate entities and then revert to the original grantors. The law is exceedingly complex in this area, and most proposals to reduce the abuses of multiple trusts and multiplegeneration trusts would make it even more complex. The following drastic change is suggested for consideration.

To the extent practicable, trusts created in the future should not be recognized as separate taxable entities. Trust income should always be taxed either to the grantor or to individual beneficiaries, and income taxability should go with estate tax responsibility. Thus, so long as property had not been transferred completely to another, it would remain subject to the estate tax of its grantor with its income taxable to him. The liability for income tax would be shifted to another at the same time as the responsibility for estate taxation. This change would make obsolete a vast amount of present estate planning and would doubtless create many problems of its own. Trusts have their place in estate planning apart from taxation and could be used. But their tax advantages have become so great and the reality of trusts as a taxable entity seems so remote to laymen, that a drastic approach to their tax treatment seems justified.

A final point on death taxes—and this, too, is a major one—would be to consider a change from an estate tax to an inheritance tax. Since the principal purpose of the tax seems to be to break up large aggregations of wealth, this purpose would be served more effectively, and certainly more fairly, if the tax were related to the amount received rather than the aggregate amount left. There would seem to be less taxpaying capacity, and obviously less concentration of wealth, if ten heirs divided 10 million dollars than if it all went to one. The states, to be sure, have

found inheritance taxes very complicated because of the valuation of future interests when property is left in trust, but this problem would be reduced by the proposed change in the taxation of trusts themselves.

Excise Taxation

The present selection of commodities and services for excise taxation makes no sense whatsoever, except for the traditional ones on liquor, tobacco, and gasoline, the latter now happily tied in with highway financing. But our reliance on excise taxation is the lowest in the world and we cannot afford to lose any of the revenue now derived from it. A broad-based tax at the manufacturers' or wholesalers' level to bring in the same amount of revenue is an obvious and much-needed reform. This basic reform can be stated thus simply; it is not developed at length, but it is of great importance.

Consumption taxation is less repressive of initiative and activity than income taxation and cannot lead to elaborate subterfuges for avoidance. Consumption taxation, by exempting savings, is especially appropriate in less-developed countries which greatly need more savings; perhaps we could benefit from this approach also. When economic expansion is especially desired, a moderately progressive consumption tax instead of, not in addition to, progressive income taxation has much to recommend it, but its administrative complexities seem to make it unsuitable for the countries which could best use it on economic grounds.

Supplemental excises at very substantial rates on items of luxury consumption would be preferable to very high income tax rates and might be adopted to offset revenue losses from high-bracket rate reductions. However, there seem to be enough ways to tighten the income tax law to assuage any qualms about an outright reduction in the higher bracket rates without establishing special high-bracket excises.

Immediate action is necessary to prevent the reduction in the telephone tax, enacted earlier this year, from going into effect next year. There is no justification for singling out the service of this healthy growing industry for special relief. Each additional reduction in excises throws more of the tax burden on income taxation, the most repressive form of all. It is discouraging that those who retain lobbyists to secure excise tax relief do not realize this simple fact.

Depletion

Most of the familiar arguments for percentage depletion seem specious. Depletion allowances do not have to be reinvested in new properties, as is often presumed. Many other assets are economically exhaustible and many other types of activity are risky. A recovery of the actual cost, and no more than the actual cost, of a property is basic in

our tax law. The fortunate circumstance that gives a value above cost is no reason for a tax-free recovery of that value, and perhaps even more than that value, by a depletion allowance quite unrelated to cost.

Some proponents of percentage depletion refer to an increase in the price of gasoline as a dire ultimate result of reduced depletion. Surely this puts their case in the weakest possible way. It suggests that percentage depletion subsidizes rapid consumption of exhaustible resources, hardly a sound policy from any standpoint.

The possible consequences of a reduction in depletion, however, require thorough analysis. With oil and minerals subject to international prices, changes in depletion would affect domestic production which is significant for security; the extent and nature of appropriate special tax treatment is by no means clear, however. Also, a reduction in depletion allowances would probably encourage further integration in the oil industry, since present values could be realized as capital gains and new purchasers of properties would establish high bases for cost depletion. There may be overriding considerations in these two areas justifying some sort of special taxation in the extractive industries, but they are not to be found in the common rationalizations advanced thus far.

In the meantime, a glaring loophole should be closed promptly. Recent court decisions permit percentage depletion on the value of some finished products rather than the value of the raw ingredients, on cement instead of rock, on bricks instead of clay. By analogy perhaps it can be taken on the value of coke instead of coal or on pig iron instead of iron ore. These decisions have permitted a several-fold increase in depletion allowances. The result is completely indefensible and should be promptly denied by legislation, unless the Supreme Court overturns the prevailing opinions of the lower courts.

Corporation Income Tax Rate

A reduction in the corporation income tax rate is desirable, but less important and more costly in revenue than the reduction in individual rates, more liberal depreciation, and lower rates on long-term genuine capital gains. The fact that business has adjusted as well as it has to a very high rate of corporate tax indicates that the tax is to a considerable extent shifted. This does not mean, however, that it is a "painless excise" and to be cherished as such. The fact of the tax has an adverse effect on decisions concerning capital outlays; the break-even point on new investments is increased in proportion to the tax. This point needs more recognition and consideration. It means that the corporation income tax impedes investment regardless of its incidence.

The new provision postponing part of the tax on life insurance companies until income is distributed may be a useful precedent for reform

in the general corporation tax. A lower tax on retained earnings would encourage savings and facilitate expansion by this most available sort of equity capital. It would lower the break-even point on new commitments of funds. If a separate tax on distributions were adopted, then, and only then, a revision of the dividend-received credit might be in order to treat that part of the corporate tax as a withholding on stockholders with a grossing-up and credit by taxable stockholders. The lower tax on retained earnings is especially suited to underdeveloped countries, but we might benefit from the same policy as we seek to step up our own rate of expansion.

DISCUSSION

CARMAN G. BLOUGH: When the invitation to participate in this program was extended to me, it was stated that the purpose was to have "something from the point of view of the accounting world." Since most of my working life has been spent in accounting, either as a practicing professional accountant or in close contact with the profession, my point of view is certainly from the "accounting world." However, I want to emphasize that I have no authority to speak for the profession and that the views I express here are my own. Indeed, some influential members of the profession will undoubtedly take strong exception to some of the comments I shall make.

Professor Shoup apparently takes a middle-of-the-road position on a very theoretical subject. It seems to me his discussion demonstrates quite effectively the impossibility of stating that the burden of the corporation income tax always comes to rest at the same place. The accountant with any experience knows that most businessmen consider the income tax to be an expense of doing business to be recovered in the price to the customer, just the same as any other expense, if possible. Whether it is possible or not depends on a great many factors, some of which Professor Shoup has mentioned. If the company can continue to sell its full output at an increase in price sufficient to cover the increased tax, it will certainly do so, but I have serious doubts as to whether there are many situations in the unregulated areas of business where that is possible. Accordingly, I am disposed to believe that in most cases the burden of the additional tax will fall, to some degree at least, upon the corporation.

Undoubtedly the ability to pass on the tax is greater in the case of a product with an expanding demand. Accordingly, I believe Professor Shoup's conclusion is quite sound when he states that in such a situation, the most significant impact of a rate change on corporate policy will be on the decisions for expansion or modernization and that if companies were able to recoup the increase in rates over the past thirty years, it was due to less spending on investment projects than would otherwise have occurred. Furthermore, he is perfectly correct, in my opinion, in concluding that business policy decisions are based on the assumption that existing rates of tax are likely to continue indefinitely and in pointing out that the tax rate is only one among many powerful forces playing on the stream of investment decisions.

Let me turn now to Professor Smith's program for federal tax reform. In general, I find myself pretty much in agreement with his introductory and general remarks. However, I will confine my comments to his more tangible specifics—an area of discussion more to an accountant's taste.

I doubt whether there are any accountants who have much to do with income taxes who would not subscribe to the view that both personal and corporate rates are too high for the well-being of the economy and probably for the maximum revenue to the Treasury. We have plenty of opportunity to see the hesitancy to risk making capital investment in new enterprises because of the small amount that may be retained if the venture is successful as com-

pared with the potential loss. We also see how much effort is expended to minimize taxes and how greatly people are tempted to misrepresent in their tax returns.

Just as we are all against sin, so are we all against "loopholes." But just as people differ over what is sin, they differ over what are loopholes. To me a loophole is an unintended benefit. These may be just as bad as an unintended hardship and both should be eliminated. However, many persons categorize as loopholes any matters of tax policy with which they do not happen to agree. Such matters should be argued on their merits as policy and not damned as loopholes.

For example, there are some who advocate the elimination of the split-income provision as a loophole. To me this is not a loophole but a well-considered decision by Congress. As a policy matter its desirability may be argued, but it cannot be damned as a loophole. Personally, I believe it would be grossly unfair to repeal it unless, as Professor Smith suggests, the concept of community property can be ignored for federal income tax purposes. Even then, it seems to me the arguments in its favor are incontrovertible if one believes that the homemaker usually contributes heavily to the success of the wage earner. Furthermore, as the staff of the Joint Committee found in its studies a few years ago, the split-income provision did not remove all of the inequites in favor of the community property states.

While I agree that there should be a tightening up of the allowances of expense accounts and that most of the situations described in that area by Professor Smith are reprehensible, there are too many cases in which the expense which appears to be personal in nature actually is for business purposes, to warrant such an across-the-board disallowance as he suggests. Each case needs to be decided on an individual basis. Accordingly, the principal problem in the expense account area seems to me to be one of administration. (Commissioner Latham's announcement of yesterday seems to be a logical move in that direction.)

Another proposal with which I have to take exception is the disallowance of state and local taxes. It is unpleasant enough to have to pay them when they are allowed, but to refuse to treat taxes paid to one taxing body as a reduction of ability to pay to another taxing body is adding insult to injury. I believe most people who pay income taxes to New York, for example, consider that state's refusal to allow federal income taxes as a deduction to be most unfair.

In passing, I would like to add my "amen" to Professor Smith's position that, instead of repealing the dividend credit, we should go much further in the direction of eliminating the double taxation which exists to a considerable degree when dividends are fully taxed.

On the other hand, I could not agree with his proposals to tax social security benefits even if I thought it would be politically feasible. If there is any merit in the Social Security Act to start with, it seems to me it would make no sense to reduce the benefits under it by taxing some of them away. Also, I question the wisdom of eliminating the retirement income credit and I am afraid I have to differ with Professor Smith in his opposition to providing for setting up retirement income for the self-employed. It seems to me this is quite

an essential move if fairness is to be done the self-employed as compared with the pensioned corporate officer or employee.

The last subject in Professor Smith's paper on which I want to comment is that of depreciation. This is probably the most important one to the CPA. The periods in which the cost of a productive facility may be deducted for tax purposes is, of course, a matter of public policy. However, since we presumably have an income tax, the logical method would seem to be one which would relate the costs of the facilities to the revenues produced by them. In most situations the accelerated methods allowed under the 1954 Code do that.

However, if as a matter of public policy it seems desirable to allow large deductions in the early years, I ardently hope Professor Smith's proposal that the accounts must be kept the same way will not be adopted. It is extremely difficult to keep corporate financial reporting practices in harmony with accepted principles of matching costs and revenues now without requiring improper financial reporting in order to get a substantial tax benefit.

Professor Smith has spoken quite critically about the tax deferment procedures which accountants have adopted for the purpose of avoiding distortion in financial statements when a company follows a different method of computing depreciation for tax purposes than it follows in preparing its accounts. Accountants believe that either the declining-balance method or the sum-of-the-years-digits method, permitted for tax purposes under the 1954 Code, are acceptable and often preferable for financial reporting purposes. When the same method is used for both purposes, no provision for deferred taxes is required, but when it is not, some adjustment for the deferment of the tax seems necessary in order to relate the tax expense to the income as reported by the company.

The farther tax depreciation departs from book depreciation, the more essential it seems to be to follow deferred tax accounting. Suppose, for example, the Congress should decide to permit the deduction of the entire cost of a facility in the year of its acquisition although it is expected to produce revenue for ten years. In such a case, certainly costs would not be properly matched with the revenues produced by them if the entire cost of the facility were to be charged off in the accounts in the year of its acquisition. Accordingly, if proper depreciation accounting procedures were followed for financial reporting purposes, a material difference would exist between the depreciation in the accounts and the depreciation in the tax returns with a resulting excessive decrease in the tax the first year and increase in the nine subsequent years in relation to the income earned as shown by the accounts. It seems to me the distortion of income which would result, if the deferred tax were not accounted for as such in a case of this kind, would be intolerable from the standpoint of a fair financial presentation.

On the controversial matter of allowing depreciation in excess of actual cost, I find myself in Professor Smith's camp. I see no justice or equity in any program that would permit owners of depreciable property used in business to adjust their costs for price-level changes unless similar treatment is accorded to all taxpayers reporting income in the determination of which costs are a factor.

RICHARD B. GOODE: Professor Smith's paper ably combines a discussion of several broad questions of tax policy with a succinct review of many specific issues. His program reveals a keen appreciation of the economic significance of technical features of the tax system. I agree with many of the recommendations, disagree with others, and am uncertain about some. Space is not available for a statement of my reasons for agreement, dissent, or uncertainty. It would not be profitable for me simply to go through the list of items, casting my vote for or against Professor Smith's recommendations and abstaining on a few items. Instead, I propose to comment briefly on some of the attitudes and judgments that appear to govern his approach to tax reform. The topics that I wish to mention are the relation between revenue requirements and tax reform, progressivity, the definition of income, and the influence of taxation on incentives.

While conceding that a tax reform that would not change total revenue yield could be devised, Professor Smith shares the widely held opinion that any politically acceptable program is likely to involve an immediate loss of revenue. Since a revenue reduction would not be appropriate in present circumstances, he concludes that tax reform should be deferred until revenues can safely be cut. Although this attitude is understandable, I believe that the linking of tax reform and tax reduction is unwise. It tends to focus attention on measures that would indeed reduce yields and to disparage other important measures that would increase yields. Acceptance of the linkage between reform and revenue reduction runs the risk that tax reform will be indefinitely postponed or that unjustifiable revenue reductions will be enacted in order to allow tax revision. Inequitable and economically injurious features of the tax structure are more objectionable when tax rates are high than when rates are low. Many reforms would become less urgent if revenues could be reduced, more urgent if revenues had to be increased. In my judgment the need for a comprehensive tax reform is accentuated by the probability that over the next several years revenue requirements will grow as fast as the yield of the present tax system, if not faster.

Among the requisites of an acceptable tax system, Professor Smith mentions fairness. Fairness clearly implies equal treatment of equals; whether, in Professor Smith's usage, it also implies progressive taxation he does not explicitly state. I take it that he favors progressivity in principle but believes that the present degree of progressivity is excessive, the heritage of "the egalitarian excesses of a quarter century ago" and of the war. The recent hearings of the House Ways and Means Committee revealed wide agreement that the top rates of the individual income tax are too high. Acceptance of this conclusion, however, does not necessarily imply a belief that the tax system is too progressive, in view of the limited number of taxpayers subject to the top rates, the discrepancies between effective and nominal rates of the income tax, and the continuance of many regressive taxes at both the federal and state-local levels. But, as Professor Smith reminds us, there is no scientific basis-perhaps not even any rational basis—for determining what is fair in this respect. A person who believes strongly in the political and social desirability of progressive taxation might think that Professor Smith's recommendations for cutting income tax rates in the upper brackets go too far and might reverse his proposal for

lowering the capital gains tax rate. No doubt there would be differences of opinion on other points and on orders on priority in tax revision. I see no reason, however, why differences with respect to the appropriate degree of progressivity should be decisive on most of the technical matters considered by Smith, including expense accounts and fringe benefits, the deductibility of state and local taxes, the "sick pay" exclusion, the interest deduction, charitable contributions in kind, and tax exemption for state and local bonds.

As a basis for deciding many questions of equity and progressivity, a definition of personal income is required. For tax purposes most American economists have come to accept as the ideal the Haig-Simons concept, which defines income as the algebraic sum of consumption and changes in net worth. Professor Smith, however, finds this definition "neither practical nor sensible." He does not say what definition he favors, but it is clear that he gives great weight to public opinion on the subject. Thus he rejects proposals for the taxation of the imputed rent of owner-occupied houses partly because it does not fall within the popular concept of income, and he supports a low tax rate on longterm capital gains partly on the grounds that, whatever some theorists may think, these gains are not income according to ordinary ideas or the views of those who realize the gains. In deferring to public opinion Professor Smith is in the distinguished company of Alfred Marshall. Marshall in defining income and capital commended to his readers "the language of common life" and "the customary point of view of the business man" and cited with respect the practices of the Income Tax Commissioners (Principles of Economics, 8th edition, London, 1938, pages 75-77). To the common sense of Marshall and the British Income Tax Commissioners it was obvious that the rental value of a house was income to an owner-occupier, whereas to Professor Smith's common sense it is equally obvious that this is not so. This disagreement illustrates one of the difficulties of the approach. I suggest that the failure of Congress and the Treasury Department to be guided by a consistent and logical definition of income is at the root of many of our difficulties and discontents in respect of the income tax.

In regard to incentives, Professor Smith shrewdly observes that the damage of high income taxation is not mainly in stopping activity but in diverting attention to tax minimizaton. Perhaps this misallocation of resources is due as much to the existence of many opportunities for realizing tax advantages as to high rates. Some avenues of tax avoidance are inherent features of net income taxation; others are not. The question arises whether the misdirection of effort could not be checked almost as effectively by closing loopholes as by reducing rates.

A somewhat similar question arises with respect to capital gains. The low rate of tax on long-term capital gains now seems to be an important safety valve in a system of high income tax rates, partly because investors eagerly seek out opportunities for capital gains. If capital gains were taxed like ordinary income, investments that offer opportunities for capital gains would become less attractive—relative to other investments and to not investing. The additional revenue obtained from full taxation of capital gains would allow other tax rates to be reduced. The general nature of the resulting change in

composition of investment can be described, but I do not see how we can predict with any assurance the effect on the total volume of investment or on the rate of growth.

RICHARD A. MUSGRAVE: My comments will be limited largely to Professor Shoup's paper. Since the incidence of the corporation tax is a problem on which Mr. Khrushchev has not pronounced as yet, the true answer is still uncertain. I am afraid that it shall remain so for quite some time.

Professor Shoup, like many of us, has been impressed with the fact that net (after-tax) rates of return on corporate investment have remained about constant over a period of drastic increase in tax rates. This finding suggests successful and almost complete shifting of the tax, be it via the short-run route of increase in price or the long-run route of decrease in investment. Professor Shoup prefers the latter explanation and argues that investment was cut in order to restore a set target rate of return net of tax.

This leads him to a model of investment behavior according to which the schedule of willingness to invest is infinitely elastic at a given net (after-tax) rate of return, while the supply schedule of available investment outlets is between infinity and zero elasticity. Given a 30 percentage point increase in the rate of tax from the late twenties to the fifties, the reduction in investment must have been such as to raise the gross (before-tax) rate of return by 43 per cent. Since the level of investment has remained quite high, it is difficult to visualize a sharp reduction. Hence, this suggests a highly inelastic investment schedule. Or, we may explain the result by the hypothesis that there occurred a shift in the investment schedule to the right and that the adjustment rather than forcing a reduction in investment merely served to forestall an increase which would otherwise have occurred. In any case, the interesting question in this line of reasoning is the magnitude of reduction in investment which was necessary to maintain the target level of yield. It is this magnitude which determines the extent to which the tax may be blamed for having retarded growth.

Professor Shoup also notes a second way in which the tax may have led to reduced investment; that is, through its effect on internally available funds. This view seems to be supported by various macro models of income determination, where available funds (after tax) are by far the most important predetermined variable in the investment function. This fit contradicts Professor Shoup's first model, but it does not exclude the possibility that the impact of the tax on available funds was cushioned initially by shifting via price increase

In all, the high level of investment which prevailed during the period of high tax rates makes it hard to believe that full shifting was accomplished via reduction in investment. Also, I am bothered by the implication of the underlying theory of investment behavior. I cannot believe that investment should be simply a function of available funds; nor can I believe that the willingness to invest as a function of the net rate of return should be so extremely elastic. As Professor Shoup himself notes, the target rate of investment itself might have changed over the period, and there remains the question of how this tar-

get rate came to be determined in the first place. If the target rate is adaptable over time, investment determination by target rate may merely approximate the same result which would be obtained with a less than infinitely elastic schedule, in which case the degree of shifting could only be partial. Adding an infinitely elastic willingness-to-invest schedule to an economy beset with wage, price, and other rigidities, we arrive at a highly defective and unstable system, which could hardly be expected to perform as well as it does.

For these and other reasons, I find it easier to accept the alternative explanation, according to which the tax was shifted by price adjustment. As Professor Shoup points out, the tax is paid very largely by big corporations which may engage in price administration. Acting as "restrained monopolists," such companies may want to raise price as the rate of tax is increased in order to restore what they consider a "fair" rate of return. If this is what happened, the implications of the shifting process differ from those of the first case. While both approaches involve an eventual increase in price, this second explanation does not involve the detrimental effect on growth which is inherent in the first approach.

Professor Smith, it seems to me, is wrong when he holds that the tax retards growth (because the break-even point is pushed up) whatever the shifting. If prices are raised, as here suggested, both the break-even point and the return before tax move up, and the acceptability of any one investment is unchanged. However, there is also a piece of evidence which speaks against this type of shifting. Over the period during which the net (after-tax) rate of return remained constant, there occurred a sharp decline in the net (after-tax) margin and a sharp rise in turnover. If the shifting had occurred via price increase, and hence restriction of output, one might have expected turnover to fall and the net margin to rise somewhat, so as to maintain the return on capital at a lower volume of sales.

Here, as throughout this discussion, the validity of the conclusion is weakened greatly by the fact that the reasoning involves a ceteris paribus assumption; i.e., the assumption that yields, margin, and turnover were affected exclusively by the changes in tax rate. If there ever was a problem which cannot be handled on a ceteris paribus basis, this is it! Over the very period during which tax rates increased, there also occurred vast changes in the structure and levels of our economy—changes which might easily have outweighed those caused by the changes in tax. Thus the increase in tax (as would have been the case with shifting by price adjustment) might have tended to raise net (after-tax) margins, but other factors (such as increased volume) might have been in the picture which depressed margins, and these factors might have been stronger. Similarly, the constancy of the rate of return net of tax may reflect a reduction due to tax (as would have resulted in the absence of shifting) offset by other factors making for an increase, and so forth. Since a simple ceteris paribus type of argument is inapplicable, general observation of the financial data can be suggestive, but it cannot give a satisfactory answer. Other approaches are needed, and Professor Shoup, in this discussion as well as in his earlier work, has given us some useful hints in this respect.

For my part, I have felt increasingly that a more complex approach to the

problem is needed, and that I should try to test the hypothesis of $\frac{1}{3}$ - $\frac{2}{3}$ used in my earlier work. As part of this endeavor, Dr. M. Krzyzaniak, Mr. P. Briant, and I have attempted to develop an econometric approach to the problem. Using data for individual firms, we have tried to derive a function in which the rate of return on invested capital is the dependent variable and tax rates appear among the predetermined variables. Thus we hope to explain the extent to which changes in the rate of return were due to changes in tax rates. For various reasons, simple time and cross-section analysis were not applicable, and a more difficult technique had to be devised. The study is as yet incomplete, and the method itself remains to be tested. As far as our preliminary results go, we were surprised to find that the rate of return before tax is related negatively to changes in tax rate. This seems to suggest less than zero shifting, or the existence of an excess burden. However, we also find that taxes had a considerable positive effect on cost payments, and that this "expense effect" reduced the rate of return before tax. If we adjust for the expense effect, we are left with a modest, perhaps 20 per cent, degree of positive shifting. While these results are as yet too preliminary to be taken very seriously, this may well be the kind of approach which must be explored to give us a more satisfactory answer.

IMPROVING THE EFFICIENCY OF THE TRANSPORTATION AND UTILITIES SYSTEMS

EFFECTS OF PUBLIC REGULATION ON RAILROAD PERFORMANCE

By James C. Nelson
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The broad problem, how to improve the performance of the American economy, which President Burns has posed for this year's sessions of the American Economic Association, furnishes an excellent focus for another analysis of the railroad situation. As an industry, the rails have lagged in the postwar economy. What are the fundamental reasons for continued railroad decline in times of general economic growth and high profitability? Do postwar trends mean that the railroads should be encouraged to accept an ever diminishing role in transport? Can the economy attain its maximum growth without greater rail participation in traffic, investment, and employment? If highest attainable performance by the economy requires railway progress, how can a greater contribution by the railroads be assured? Will a fundamental modification of transport regulation contribute to that end?

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Since the economy attained both high levels of employment and tolerable rates of growth in postwar years during which the railroads stood still or declined, it can be argued plausibly that scant reason exists for public concern over railroad retrogression. According to this view, the best remedy for the economy, if not for the railroads, would be to encourage them to disinvest and to withdraw rapidly from the passenger business and gradually from commodity transport.

For this view to be tenable, several conditions must be met. First, it must be demonstrable that rail service can physically be replaced by alternative transport. Second, it must be shown that other modes cannot only perform the railroads' traffic load but also that they can carry it at lower total costs in resources, or at the same total costs but with improvements in service. Third, it must be likely that future technological change will be limited to modes of transport other than railroading.

None of those conditions is likely to occur in any foreseeable period. With the railroads still handling almost half of the intercity ton-miles by

all agencies, it will take a long time before their key transport role is reduced to insignificant proportions. The economy could come much closer to doing without the railroad passenger service, for the rails already have largely been displaced in the passenger market. Air and highway carriers now handle almost 97 per cent of the total intercity passenger-miles. Even so, some rail passenger service will permanently be required in metropolitan transport, on dense routes up to medium length, and for military needs. And with commodity transport so largely carried on the rails, it would seem the counsel of economic nonsense to conclude that railway progress is not still of significance to the economy as a whole.

In comparison with the railroads, tankers and pipelines transport oil at far less cost, integrated barge tows and ships haul bulk traffic more efficiently on some channels, and trucks carry high-value goods at less cost over short hauls. But it cannot be demonstrated today that the vast residual freight traffic handled by the railroads can be carried by alternative agencies at lower total costs, even if it were possible to transfer the entire load to them. Meyer and associates have explored the relative cost question in their recent volume, The Economics of Competition in the Transportation Industries.1 Giving barge lines and motor carriers the benefit of the doubt as to the existence and traffic-diversion effect of subsidies and allowing for growth of efficient transport of solids through pipelines, these authors found that for the same "residual social cost" of 5.5 billion dollars the railroads can haul 37 per cent more ton-miles than could be handled by truck. This was the case even though a low figure of twenty cents per truck-mile was taken as the basis for estimating truck marginal costs and after adjustments were made for the inventory savings that accrue to shippers because truck service is superior to rail service.

It must always be considered that technological change might greatly reduce the cost of alternative transport relative to that by rail. For example, truck trains might achieve this result unless offset by higher incremental highway costs. However, in view of the diesel revolution, electrification and atomic power possibilities, the capital savings from centralized traffic control, the piggyback method, electronic car tracing and other automation possibilities, and the low levels of way investment in recent years, it would not be safe to assume that additional improvements in rail technology will not be made. More rapid technological change in nonrail transport may well reflect the greater national encouragement to investment in public facilities rather than any inevitable

¹ John R. Meyer, Merton J. Peck, John Stenason, and Charles Zwick, *The Economics of Competition in the Transportation Industries* (Harvard Univ. Press, 1959), Chap. VI.

outcome of the relative rates of invention in different fields of transport or of the greater maturity of the railroads.

As transport costs can be minimized only if the railroads operate efficiently, it must be concluded that rail transport is still highly significant to the performance of the entire economy, although not as important as in the last century. Hence a closer look at the declining role of the railroads is desirable.

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The facts showing retardation in railway growth after 1920 and relative decline within transport as a whole have been documented. Hence only a few pertinent trends need be cited to point up the critical question whether the entire extent of railroad decline can logically be accepted as inevitable and economic or whether institutional factors, including public control, have extended it beyond economic limits.

Compared with the late twenties, postwar rail freight traffic levels have risen about 40 per cent, although the rail share of total intercity ton-miles has fallen from 76 per cent in 1926 to about 45 per cent today while the barge, pipeline, and truck shares have risen rapidly. Rail ton-miles have not risen above their 1947 postwar peak whereas those carried by competing truckers, barge operators, and pipelines have doubled. Hence, while the railroads were standing still, truck traffic rose in excess of 150 billion ton-miles, pipeline traffic by more than 125 billion ton-miles, and barge traffic by 80 billion ton-miles. Rail passenger traffic is now far below 1926-29 levels, the rail share having dropped to barely more than 3 per cent of total intercity passenger-miles, including automobile travel, and to less than one-third of common carrier travel. Most of the vast increase in postwar travel went to the automobiles and the airlines took the rest. Plainly, the railroads did not participate in the traffic growth of the postwar economy.

Failure to share in growth traffic, tremendous losses of high-rated traffic formerly carried, and rate adjustment restrictions combined to produce slippage in the rail share of carrier revenues. Thus the rail share of the total revenues of all federally-regulated carriers dropped from 72 per cent in 1947 to 56 per cent in 1956. And while total motor freight revenues (including those of exempt carriers and the expenses of private truckers) rose from 1.7 billion dollars in 1940 to 13.6 billion in 1955, rail freight revenues increased only from 3.5 billion to 8.5 billion.

Together with the cost effects of inflation and the impact of sub-

² See Harold Barger, *The Transportation Industries, 1889-1946* (NBER, 1951), Chap. 4; and James C. Nelson, *Railroad Transportation and Public Policy* (Brookings Inst., 1959), Chaps. 2, 3 and Appendix A.

stantial passenger service deficits, these conditions soon returned the railroads to the status of a low-return "sick" industry after wartime prosperity and traffic levels gave promise that a full employment economy might solve major railroad problems. Postwar rates of return on net railway investment, with few individual and regional exceptions, have been at the 3 to 4 per cent level. Returns have been lowest in the Eastern District. Not only has low profitability not been limited to a few marginal roads, but the operating deficits during the 1957-58 recession revealed once again that such low earnings are wholly inadequate for important railroads to establish sufficient reserves to tide them over adverse times without experiencing an almost immediate threat of bankruptcy. In marked contrast, the motor carriers, barge lines, pipelines, and airlines have generally prospered.

Notwithstanding, a strong financial condition at the close of the war, accelerated depreciation, reinvestment of net income, and large issues of equipment obligations enabled the railroads to make gross capital expenditures averaging 1.1 billion dollars yearly during 1946-55. About 60 per cent went to finance dieselization and limited freight car replacement. But government investment in public transport facilities has expanded far more and continues to rise while rail investment has fallen sharply since 1957. Thus the annual capital expenditures by all government units for highways rose from about 5.0 billion dollars in 1956 to 7.1 billion in 1959; and those for the competitive Interstate System rose from 1.3 billion to 2.8 billion, or by 1.5 billion annually. Without access to public capital, it has been impossible for the railroads to keep up in capital investment and in applications of improved technology.

For three decades, the railroads have not attracted capital for making any but the most profitable or needed investments. Often only investments in improvements capable of yielding returns of 25 to 40 per cent a year can be undertaken. A Brookings Institution questionnaire estimated annual railway capital requirements for 1956-65 at 1.4 billion dollars on one set of reasonable assumptions and at almost 1.6 billion on another, or from 30 to 43 per cent higher than actual capital expenditures during 1946-55.3 John W. Barriger has estimated that rail investment should be doubled, to about 2 billion dollars a year at 1954 prices; and that the greater part should go into roadway improvements to enhance the speed of service and to bring about substantial cost reduction. In any event, recurring freight car shortages, insufficient modern cars for efficient loading and unloading, slow progress in installing roller bearings on freight cars, and the small annual capital funds (only 329 million dollars a year during 1946-55) going into road improvements compared with the twenties suggest that rail capital investment has

⁸ Nelson, op. cit., pp. 378-411, Appendix B.

lagged behind the many opportunities for modernization and achievement of higher standards of efficiency and service.

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Of the numerous reasons given for railroad decline or growth retardation, technological substitution has been in the forefront. Indeed, much of the shift of traffic from the rails can be attributed to the ability of competing agencies either to render more flexible, convenient, and speedy service or to furnish service at lower costs to consumers.

If all displacement of rail transport merely reflected such factors, railroad decline would be of slight concern. However, technological substitution must be rejected as a complete explanation. In the first place, rail freight rates have not been adjusted in close relation to relevant unit costs and in such a manner as to induce achievement of maximum economy and profitability in railway operations. Second, the rates quoted for competitive air, highway, and water services have not included all resource costs essential to their provision. Third, some critical efficiency problems in utilization of labor and freight cars remain to be solved. Fourth, rail investment has been insufficient for attainment of all potential economies. Finally, the effects of public regulation must be taken into account.

The long-standing attempt to maintain a monopoly value-of-service rate structure in what has become an essentially competitive transport market suggests that much of the railroad loss of freight traffic and revenues has been uneconomic. In the areas of greatest profit potential, that is, manufactured goods, rail rates have been maintained at levels far above relevant rail costs. Aggregative pricing through a succession of horizontal rate increases has contributed to that result. Thus the discriminating rate structure has been steadily preventing the railroads from carrying profitable traffic but not from transporting low-rated and even unprofitable traffic. On the other hand, high-cost carriers emphasizing superior services have been able to divert vast portions of the high-rated volume traffic simply by maintaining rate parity with the railroads. The truckers have maintained rate parity despite cost differences by adopting rail rates and by following rail leadership in raising rate levels. Minimum rate orders have also emphasized parity in rates.

Although railroad traffic losses resulted from the exercise of free choice by shippers, this does not necessarily imply that over-all shipper choice has divided the traffic between road and rail in the most efficient way from a resource-use standpoint. Undoubtedly, the shippers usually choose between service and rate offerings so as to maximize their individual gains from transport. But with rail rates frequently far above long-term rail marginal cost, with rail service usually inferior to truck

service, and with rail and truck rates in parity relationship at or above the higher truck costs, shipper choice logically has favored the superior but high resource-cost truck service. Notwithstanding, shippers would choose the lower cost but inferior rail service at rates below truck rates in all cases in which the added truck service does not create savings in production or marketing greater than the rate differentials in favor of the rails.4 Accordingly, there has been no adequate market demonstration that the present traffic distributions would be unchanged were the rates of each agency to reflect its unit costs. Since considerable evidence exists that shippers will shift back to the rails if rail rates reflect the lower rail costs under efficient shipment practices, it cannot be concluded that all past changes in the division of traffic and revenues have been economic because of the force of technological substitution.

In the past, rail pricing has also failed to stimulate the most efficient shipments, loading of freight cars, and railway operations. But as recent rate innovations, such as those in the Paint case, have revealed, incentive rates to induce full loading of cars, multiple-car shipments, regularized rather than sporadic use of rail plant, piggyback and other terminal-simplifying methods of container shipment, and the aggregation of small shipments can bring about substantial unit cost reductions.⁵ Thus judgments adverse to rail economy should be deferred until the many opportunities to lower rates to induce lower unit costs have been exhausted.

A thorough analysis of subsidy effects cannot be undertaken here. Logically, however, the costs of air and water carriers, and probably those of long-distance truckers, have been lowered relative to rail costs because user fees have not been charged or have been inadequate to cover the annual costs of public facilities, including proportionate general tax contributions. Until user fees become universal and return such costs, including reasonable social costs, there will be ground for doubt that market divisions of traffic are fully in accord with relative economy. This would still be true were rates made in close relation to carrier costs. But even if subsidies are treated as insignificant in traffic allocation, the greater availability of capital for public transport investment can have, and probably has had, serious effects in weakening the railroad position.

Contrary to a popular view, the rail industry's over-all productivity has continued to increase at rates comparable to or in excess of the productivity gains of other leading industries. This has been accom-

Barger, op. cit., pp. 52-57, 94-111; and Nelson, op. cit., pp. 235-42.

⁴ Meyer and Associates, op. cit., pp. 189-96 and Appendix D; and J. R. Sargent, British Transport Policy (Oxford Univ. Press, 1958), Chap. I.
⁵ ICC, I. & S. Docket No. 7027, Paint and Related Articles—Official Territory, decided Aug. 27, 1959 (mimeo.).

plished by dieselizing motive power, operating long and faster trains, equipping main lines with heavy rail and ballast, installing CTC, utilizing machine methods in maintenance-of-way operations, and by adopting automation in clerical functions. But there is evidence that the railroads still overemploy labor in relation to traffic. This is particularly true in train and engine service, with firemen on freight diesels an outstanding case. Of comparable importance, efficiency in use of freight cars has lagged far behind motive power and train performance gains. For example, no improvement has been made in the miles per freight car-day since 1947. The achievement of greater efficiency in use of labor and cars, including discouragement of excessive shipper detention, would reduce rail costs and improve service. With appropriate pricing and scheduling, the reasonable result would be more traffic and higher returns for the railroads and rail labor.

Trailers and containers on flat cars comprise a notable service break-through. Taking advantage of the low line-haul costs by rail, eliminating much costly terminal handling and switching, giving speedier and more complete service, and reducing loss and damage claims, piggyback transport, with its associated incentive rates encouraging freight forwarders and shippers to ship by rail, appears to be the most significant innovation since dieselization. If it attracts large volumes of traffic from private carriers and co-ordinates rail and highway transport, it may strengthen substantially the traffic role and long-term profitability of the railroads. In addition, when flat cars and trailers are furnished by the users, capital funds are released for other urgently needed investments in modern technology.

In certain cases, some efficiency gains can also be achieved through consolidations, such as the recent merger of the Norfolk and Western and Virginian. By utilizing the best grades, consolidating yards, concentrating traffic on fewer main lines equipped with CTC, and by reducing maintenance of other lines, consolidations can reduce costs. However, because many economies of scale have been attained, consolidation offers more promise where it can increase utilization of excess capacity created by traffic shifts and technological change than where it merely increases the size of railroads.

IV

Several observations can now be made as to the effects of regulation. In the first place, the extension of entry and minimum rate controls to motor and water carriers has obviously not prevented railway decline, nor has it resulted in profitable, energetic, and flexible railroading. In-

⁷ ICC, Finance Docket No. 20599, Norfolk & Western Railway Company—Merger, Etc.
—Virginian Railway Company, decided Oct. 8, 1959 (mimeo.).

deed, with about nine-tenths of the inland waterway services and twothirds of trucking entirely exempt from such controls, the attempt of regulated common carriers to maintain high rates, with the support of entry and minimum rate limitations on regulated competition, has had the reverse effect of lessening the role of common carriers.

Second, the welcome revitalization of rail management that is now appearing was delayed by the false feeling of market security which the regulatory program of the thirties long engendered among railroads. With motor and water carriers also bearing some regulatory burdens, competing rates published, and rate and service changes subject to protest and regulation, the railroads thought it safe to continue their traditional discriminating rate structure long after its monopoly base had been fatally undermined by rapid growth of air, highway, and waterway facilities. The regulators were equally confused but have been far slower than the railroads to recognize the role of competitive pricing in bringing about an efficient allocation of traffic. Like the regulated common carriers, the Interstate Commerce Commission called for closing the gaps in regulation, tightening restrictions even when plainly creating inefficiencies, and holding to high minimum rates as long as possible. How bankrupt this policy has been is now evident to all except those standing to gain from uneconomic railway decline and a few specialists who still fail to recognize that competitive forces have made the past pattern of discriminating rates unworkable and that cost and institutional conditions have changed in such manner that competition has become tolerably workable in transport.8

Third, the decisions interpreting the National Transportation Policy as requiring minimum rate orders allocating traffic so as to enable all regulated modes to remain permanently in the markets presently occupied have been barriers to rail action toward reducing rates to costs and attracting traffic for which rail costs are lower and superior service is not worth a higher charge. Such regulatory interference necessarily injured the market position of the railroads most, for in motor-rail competitive cases the rails generally have been found the low-cost carriers and are fully under regulation. While rail management could have justified their need for competitive rates more adequately, regulatory philosophy and conditions actually discouraged vigorous rate experimentation until the recent desperate position of the railroads demonstrated to Congress and the ICC the serious long-term effects of regulatory "fair-sharing" and other protective regulatory policies.

Fourth, regulatory processes and decisions contributed to weakening the railroads by delaying and limiting the essential rate-level adjust-

⁸ For example, see George W. Wilson, "Current Criticisms of the Interstate Commerce Commission," Current Economic Comment, Aug., 1959, pp. 3-16.

ments to postwar inflation. Thus the judgments of shippers and regulators were substituted for those of responsible carriers as to the elasticity of demand for rail carriage. In early postwar years, this reduced rail profitability when transport was in short supply. By delaying adjustments to a time when general rate increases diverted much profitable traffic, the final diversionary effects were increased. Had the railroads not been held down in this way and in raising unprofitable rates, their higher profits would have induced additional investment, greater modernization of facilities and services, and lower unit costs than actually occurred.

Fifth, state regulation blocked or delayed the discontinuance of numerous hopelessly unprofitable passenger train services and also many intrastate rate and fare adjustments. Moreover, the ICC found no solution for the passenger-deficit drain upon railroad profitability, although it rendered a real service in the recent Railroad Passenger Train Deficit case by shocking the public into widespread concern over the institutional conditions that may eventually cost the public their long-standing and valued right to turn to the trains when all other transport fails. And after the Transportation Act of 1958 transferred ultimate authority over discontinuance cases to the ICC, encouraging realism has been shown in permitting the dropping of distinctly unprofitable passenger trains and ferries.

Also standing in the way of efficient railroading are the state full-crew laws requiring employment of more train labor than essential for safe operations. Likewise, the collective bargaining procedures under the Railway Labor Act cannot be neglected in a search for factors possibly contributing to the railroads' failure to attain as great advances in efficiency as seems possible with modern technology. Clearly, the railroads have not been adamant enough in insisting on elimination of featherbedding and make-work rules. Labor, too, may have some points requiring consideration. Notwithstanding, the role of public regulation of labor relations in labor productivity should be examined, as in Canada, in an impartial and thoroughgoing way.

Regulatory law has kept the agencies of transport in separate compartments, except for through routes and joint rates and railroad trucking operations in supplementary service along rail routes. Railroad trucking between key rail points has been greatly restricted. Although strongly supported in the past as essential to maintenance of interagency competition, it is entirely possible that this basic policy has been carried so far as to undermine the railroads in a situation in which their competitors enjoy public way and terminal facilities free of charge

[&]quot;ICC, No. 31954, Railroad Passenger Train Deficit, decided May 18, 1959 (mimeo.); see also the proposed report by Examiner Howard Hosmer, issued Sept. 18, 1958.

or at inadequate user fees and do not contend with their fixed costs. To what extend piggyback transport can overcome the technological inflexibilities of nonintegrated transport cannot be predicted. However, numerous regulatory cases reveal that regulatory restrictions on railroad trucking, like those on certificated motor carriers, create inefficiencies and often deny the public of services that the independent truckers appear unwilling to perform. Here, again, regulation has retarded rather than stimulated service innovations.

V

In conclusion, regulation cannot be blamed for all troubles of the railroads. Management must take far more aggressive and imaginative action with respect to competition, especially in solving its pricing, service, labor, and car-service problems. But regulation has contributed significantly to railway decline in a variety of ways and has demonstrated neither how regulatory allocations of traffic can create more economic divisions of traffic nor why market allocation, with a minimum of regulatory hindrance, cannot accomplish that social purpose. By standing in the way of change rather than by encouraging it, by creating inefficiencies in transport organization, by protecting high-cost modes, and by neglecting the truly important allocative efficiency questions, regulators have placed themselves increasingly on the defensive with not only the railroads but also with growing elements of the public. Clearly, an objective re-examination of public policy is desirable.

Relaxation of regulation in terms of present-day market conditions and needs, especially the urgent need for achieving an economic allocation of resources in transport, can no longer be delayed. The Transportation Act of 1958 provided only a modest start in this direction. Protection of socially inefficient carriers or agencies should be eliminated as a goal or consequence of regulation. The only protection needed is that which will insure the maintenance of competition in the long run, at least until evolving technology makes it clear that another regulated monopoly would bring minimum total costs in transport as a whole. Social objectives that the market cannot assure should be provided by direct means rather than by tampering with transport pricing. Regulation of entry that creates inefficient operations, such as empty return hauls, low utilization of equipment, and circuitous mileage, should be eliminated as speedily as practicable. And if carriers are to price for efficient and profitable transport, minimum rate standards must allow economic rate competition by the low-cost mode. Some long-standing standards of rate equality may have to be sacrificed to the greater but partially conflicting goal of an efficient resource allocation in transport.

Much, but not all, of the railroads' declining role is explainable by

technological change and the forces in industry emphasizing short rather than long hauls. But there has been no reliable demonstration that all railroad decline in the freight field has been economic. As the railroads remain one of our largest industries and employers of labor and minimum transport cost is basic to efficient performance of the economy, it is important to adopt public policies that will work toward, and stimulate, the achievement of maximum productivity and efficient traffic performance by the railroads. Allowing the roads to adjust dynamically to the competitive conditions facing them is the best way to assure rapid railway progress, the minimization of transport costs, and the maximum contribution that transport can make to economic growth and prosperity. This will increase rail investment and maintain employment and at the same time will release resources, including labor, used wastefully in high resource-cost transport for more productive employment elsewhere in the economy.

ECONOMIC ISSUES IN REGULATING THE FIELD PRICE OF NATURAL GAS

By Alfred E. Kahn Cornell University

It was five and a half years ago that the Supreme Court, in its Phillips decision, told the Federal Power Commission to regulate the field price of natural gas. That price has continued to rise sharply and continuously since then,1 with little hindrance from the Commission. The question of whether it ought to be effectively regulated and if so, how, remains as hotly contested as ever; and the only prediction one can make with confidence is that these issues will continue to engage a reluctant Commission, the courts, and Congress for the next several years as well.

Much of this ground has already been rather thoroughly trodden, not to say trampled, in numerous forums, including this one two and four years ago.² I will try to avoid repeating familiar arguments by proceeding as rapidly as possible from an appraisal of the controversy over the economic merits of field price controls to an analysis of the experience to date of trying to fix price on the basis of cost. This discussion will lead directly to my third topic: the inevitable interrelationships between the public policies we adopt for gas and those we have already adopted for oil. The latter subject suggests a common theme for the two papers presented at this session: the weaknesses of fragmented regulatory approaches to technologically and commercially interrelated problems.

To Regulate or Not to Regulate?

The controversy over the desirability of fixing the field price of gas on the basis of cost centers on four issues: The first concerns the workability of competition in the relevant market; the second, the presence

¹The average prices at which reserves were being committed to interstate pipelines, which had increased from around 5 cents in 1947-49 to 11.2 cents in 1954, reached an estimated 15.1 cents in 1957 and are almost certainly markedly higher today. The earlier

estimated 15.1 cents in 1957 and are almost certainly markedly higher today. The earlier prices are the ones supplied by John Boatwright to the House Committee on Interstate and Foreign Commerce, in its 1957 Hearings, Amendments to the Natural Gas Act, p. 1176. The 1957 figure, which is roughly comparable though probably on the low side, since it does not cover south Lousiana, comes from the testimony of Jules Joskow, In the Matter of Hunt Oil Co., FPC Docket G-9065 et al., 1959.

² Joel B. Dirlam, "Natural Gas: Cost, Conservation, and Pricing," A.E.A. Papers and Proceedings, May, 1958, pp. 491-501; Martin L. Lindahl, "Federal Regulation of Natural Gas Producers and Gatherers," A.E.A. Papers and Proceedings, May, 1956, pp. 532-44. The interested reader should also consult the testimony of M. A. Adelman and of the present writer in the so-called "Omnibus" Hearings, In the Matter of Champlin Oil & Refining Co. et al., Docket G-9277, 1958, and of J. Rhoads Foster, In the Matter of Gulf Oil Corp., Docket G-9520 et al., 1959.

or absence of such inelasticities of supply and demand as might cause even a competitive market to work badly; the third, the question of whether the presence or absence of workable competition is a sufficient guide to public policy; and the fourth, whether it is economically meaningful to try to ascertain the cost of producing natural gas. It might be defensible to take any of the numerous possible combinations of positions on these issues. But as is so often the case in arguments over matters of public policy, the protagonists have tended to choose only between two of them, either maintaining that competition is effective, that that is all one needs to know, that even if it were not, supply and demand are elastic, and that even if they were not, it makes no sense to regulate gas on a cost-of-service basis; or taking the diametrically opposing combination of positions. After several years of swimming in this sea of debate, I feel confident in no other conclusion than that the opposing forces are stalemated, so far as economic arguments alone are concerned.

The first reason is that we still do not know certain elementary facts about this market. The most important gap concerns the concentration of control over the relevant supply, the uncommitted reserves in bidding for which pipelines have driven prices up so spectacularly in the last decade. This is a strange situation for an industry that is supposed to be regulated. On the basis of a string of individually plausible assumptions, I have made a horseback computation that the four biggest oil companies may have controlled 40 to 50 per cent and the eight largest 60 to 70 per cent of uncommitted reserves at the end of 1955, but these guesses may be far off the mark.3 Concentration of actual gas sales, even from particular areas under contracts signed in a particular one- to threeyear period, is not in most instances high, except in south Louisiana. But it is south Louisiana which has been the locus of the most important recent discoveries and the price bellweather for the industry. It is not necessarily implausible that large sellers may be holding back on interstate commitments⁴ and in so doing helping to push up price. New contract prices have been rising on the order of 10 per cent a year—a fair compensation for waiting in a world of corporations whose executives take the long view of profit maximization and whose stockholders are interested largely in capital gains.

Another area of ignorance which makes it difficult to reach a decisive conclusion about the workability of competition is the appropriate geographic definition of the market. Opponents of regulation have pointed to the increasingly intricate national web of pipelines as evidence of a virtually national market for new gas; this produces an impression

³ Op. cit., Transcript, Vol. 38 LC, pp. 4961-62, and Exhibit 57-LC, Schedule 8. ⁴ See the contention that Humble Oil is holding back "an immense block [of gas] on the King Ranch," "The Unnatural Problems of Natural Gas," Fortune, Sept., 1959, p. 125.

of relatively low seller concentration. On the other hand, the records of certification proceedings contain statements by pipeline executives justifying high prices they contracted to pay for particular large blocks of new gas in terms of the very limited range of choice in their normal purchasing areas. The trouble is that economics affords no basis for deciding what weights to attach to the long versus the short run. The pipeline may in the short run be confined to a particular supplying region; but in an expanding industry new capacity is constantly being constructed. There are always some lines so situated that they can in formulating construction plans shift to take advantage of supplies wherever they emerge, thus relieving the pressures on supplies elsewhere. Pipeline buying interest has in fact shifted historically from one producing center to another. In the process, prices have tended to move in step from one region to another—evidence of a national market albeit with serious lags, striking geographic discrepancies, and in steplike jumps betokening a large element of price administration.⁵

In my judgment, the upsurge of price from one plateau to another has reflected the changing balance of demand and supply more than it has monopoly. Demand has moved up along a relatively inelastic long-run supply curve: witness the 192 per cent rise in new contract prices over the period 1947-57 associated with an 83 per cent increase in reserves discovered.⁶ And demand has grown because, once long-distance transmission became feasible, gas was underpriced in the field relative to other fuels.⁷ Such a conclusion might persuade a jury of economists to return a verdict "workably competitive," and to conclude that the best procedure would be to let price rise to the point of equilibrium.

Here, however, we arrive at the fundamental reason for the stalemate over the economic merits of field price regulation. This market has characteristics that are not ordinarily comprehended within the criteria of workable competition. The bulk of capacity is tied up by long-term contract; only the thin veneer of currently emerging reserves is available to the market in which new prices are determined. On that limited supply converge the ever increasing anticipated requirements of the

⁶An excellent account of this historical process is provided by Edward J. Neuner, "Monopoly and Competition in Natural Gas Production" (unpublished Ph.D. dissertation, Columbia Univ., 1957).

Frice data from sources indicated in note 1, above. Gross findings data from Bureau of Mines, Minerals Yearbook, and American Petroleum Institute and American Gas Association, Proved Reserves of Crude Oil, Natural Gas Liquids and Natural Gas (annual). Additions to reserves vary from year to year, but the 1947-57 comparison produces a representative result. This relative behavior of price and new supply over time may merely reflect changes in the supply function and/or increases in the degree of monopoly exploitation rather than long-run supply inelasticity, but in my judgment it reflects the latter as well.

⁷See the testimony of Sam H. Schurr, U. S. Congress, Jt. Econ. Com., Subcom. on Automation and Energy Resources, *Energy Resources and Technology*, 86th Cong., 1st Sess., 1959, pp. 23-24, 42-43.

next twenty years or so, in the demands of pipelines seeking the long-term commitments that are for them the ticket to certification. The pipeline business has been highly profitable; the race for reserves and certification is therefore a hectic one. The price that must be paid for gas can hardly be the decisive consideration of whether or not to sign up, for regulated companies who can promptly reflect rising field prices in their rates.

The critical price decisions, then, are made in a market thinned out more on the supply than on the demand side by virtue of the combination of twenty-year contracts and anticipations of ever increasing needs. The indefinite escalation clauses now incorporated in most contracts then tend to generalize the prices thus enhanced to all sales, under contracts new and old. The result is not just to confer economic rents on historically low-cost suppliers by equating the price on all sales to the cost of marginal supplies. It is, I believe, to produce a higher price than would prevail if there were no long-term contracts on the one hand and no escalation clauses on the other. This tendency exists entirely apart from the possibility of monopoly in the market for incremental reserves; but the thinness of the market and the ubiquitous favored-nation clauses increase the possibility, and accentuate the possible influence, of monopoly power, too.¹⁰

It is difficult to sweep all these peculiarities under the rug of workable competition. And even if one could, it is difficult to be certain that such an exercise in housekeeping answers all possible questions of political economy. When changes in demand are so great and supply so apparently inelastic as, in the peculiar circumstances just described, to double the basic real price of one-fourth of our national energy supply, conferring large economic rents and possibly monopoly profits on those who have managed to appropriate a part of our national resources, I am skeptical that economics can be said to dictate a policy of laissez faire. One is reminded of the late and lamented Walton Hamilton's strictures against substituting slogans and general policies for the study of individual markets and the devising of specific remedies:

An industry, like an individual, is part of all that it has met; it has a character, a structure, a system of habits of its own. Its pattern is out of accord with a normative design; its activities conform very imperfectly with a chartered course of industrial events.

⁸ According to computations by Ralph O. Badger, returns on equity of nine leading companies averaged 14.93 per cent after taxes in the period 1950-57. In the Matter of Tidewater Oil Company, Docket G-13,310 et al., Exhibit 138, Sch. 27.

⁹ Sometimes, it is claimed, the pipelines are so anxious to get in and stay in that they

^o Sometimes, it is claimed, the pipelines are so anxious to get in and stay in that they buy more tickets of admission for future performances than the Commission or underwriters require. The demand for reserves is thus further inflated by preclusive buying. See testimony of A. C. Rubel, R. R. Von Hagen, D. D. Ostrom, In the Matter of Southern California Gas Co. et al., Application 40538, Calif. Pub. Util. Comm., 1959.

See the dicussion of Neuner, op. cit., pp. 40-56, 351-53, 414-22.

A policy for the operation of an economy is one thing; the ordering of the affairs of an industry quite another. . . . As the economy which fails to perform needs its general remedy, so the industry out of order requires its specific.¹¹

The Meaning of Cost

The question of whether it makes any sense to regulate gas on the basis of cost, as the courts have directed the FPC to do at least as a starting point, 12 itself involves a host of subsidiary issues. About most of them there is time only to record my judgment that if there were a will to regulate, they would prove susceptible to pragmatic solutions at least as rational as those achieved by this highly imperfect market. I refer to the problem of ascertaining costs for each of 5,000 to 7,000 producing companies—the great majority of which will clearly have to be exempted from this kind of regulation and subjected instead to a flexible price freeze; or the problem of translating over-all company costs of service into hundreds of individual contract prices. As for the latter, flexibility and a minimum disruption of prevailing rate designs could be achieved by adjusting individual prices up or down by whatever percentage is required, thus retaining present geographic and temporal differences. But since present patterns largely reflect irrational differences in the balance of bargaining positions and in the time at which gas was committed, it will probably be desirable to reduce the present wide dispersion by relating individual rates more closely to average companywide costs, as well as to prevailing area medians. It will probably be desirable also to permit higher prices on new than on old gas, because of the likelihood of increasing costs over time and the probability that the regulatory lag would otherwise leave companies with chronically inadequate cash and incentive to add to capacity, or to commit what they find to interstate markets.13

The basic, and more difficult, question is what one means by the "cost" of gas, and how it is to be determined. Most gas is produced in conjunction with liquids—the roughly two-thirds that comes from gas wells with varying quantities of LP gases, natural gasoline and condensate and the other one-third from oil wells, with oil. Perhaps threefourths to four-fifths of total operating expenses and investment costs cannot be assigned directly to a single product. The necessity for cost allocation is not unique to this particular regulatory situation. But in other regulated industries the purpose of allocation is principally to

¹¹ Price and Price Policies (McGraw-Hill, 1938), p. 4; "Coal and the Economy-A De-

murrer," Yale Law J., 1941, p. 595.

¹² City of Detroit v. F.P.C., Court of Appeals for the District of Columbia, Dec. 15, 1955, 11 PUR 3d, 113; and In the Matters of Union Oil Co. of Cal. et al., Dockets 4331 et al., FPC Opinion 300, Dec., 1956.

¹² For a lucid and useful set of suggestions, see the testimony of Charles H. Frazier, In the

Matter of Tidewater Oil Co., Docket G-13,310 et al., 1959.

divide among various groups of customers the burden of contributing to a cost of service the total of which is fairly readily determinable and subject to control. In gas, instead, the purpose is to determine the appropriate contribution of the purchasers of gas to a total the major component of which—revenue from liquids—is not supposed to be regulated at all.

Where the proportions of joint products can be varied, each has an objective opportunity cost. Where they are produced in invariant proportions, cost for each can only be a convention, conceivably useful for certain formal purposes like valuing inventories for tax purposes, or as reflecting some conception of what it is fair or reasonable to charge the respective customers, but not to be confused with cost as the economist conceives it—as indicating the outlays that price must cover if supply is to be forthcoming.

The precise character of the joint product relationship between gas and liquid hydrocarbons is difficult to characterize, and the oil company expert witnesses have at various times tended to emphasize this or that aspect depending on which served their immediate purpose. When attempting to stress the impossibility of meaningful cost allocations, they have averred that the two have a single, nonseparable supply function. But when attempting to argue the case for letting the price of gas rise, their emphasis has shifted to the alleged directional character of exploratory and developmental effort as between the two products, and the resultant allegedly high degree of price elasticity of gas supply.

This much of a consensus seems to emerge: that for the most part true exploration is nondirectional as between gas and oil;14 that the developmental probing of proved producing areas is directional in the sense that one knows whether one has at hand gas-bearing formations with relatively low and in any event known proportions of contained liquids, or oil-bearing strata, with relatively low proportions of dissolved or overlying gas; and that the proportions of gas and liquids produced from individual wells are fixed except to the extent it is feasible to return the gas to the producing formation.15

Clearly most expenses off the lease, including the very large ones associated with exploration, cannot even be attributed to predominantly

1958. Computed from Bureau of Mines, Mineral Market Report, No. 2972, Sept. 10, 1959.

¹⁴ The 1957-58 experience, during most of which oil production allowables were cut back severely while natural gas markets remained buoyant, suggests that even this generalization may require strong qualification. Whether by chance or in response to market forces, the ratio between additions to proved reserves of gas and of oil from revisions and extensions of known fields declined while the ratio of additions by truly new discoveries soared to a level about 60 per cent above that of 1955-56. The statistics, which can be computed from the annual proved reserves estimates of the API and AGA, are set forth in the testimony of Bruce C. Netschert, Energy Resources and Technology (op. cit., note 7, above), pp. 32-33.

¹⁵ Approximately 11.3 per cent of the gross production of gas was cycled in this fashion in 1958. Computed from Bureau of Mines Mineral Market Refeart. No. 2072. Sept. 10, 1959.

oil and predominantly gas wells. Most on-lease costs can be so identified; but they would still have to be divided in some way among the joint products issuing from each. The one-third of the gas produced in association with oil and the unknown but apparently large additional quantity produced in retrograde condensate reservoirs could conceivably be charged its opportunity cost, because in both instances it is subject to return underground in the interest of the maximum efficient recovery of the liquids. But that cost could not meaningfully be applied to most of this gas; most of what is cycled is likely to have a prohibitively high cost, in the sense that it could not be sold at a price reflecting the superior form value of the liquids it is used to lift. And most of what is not cycled has no such opportunity cost.

Lacking objective, direct measures, the opposing parties in gas rate cases have had to seek allocation formulae. Not unnaturally their choices implicitly reflect their respective purposes. The FPC staff has generally proposed to divide costs on the basis of respective sales realizations. Since the average realizations from gas are heavily weighted by old, long-term contracts, the consequence of this procedure has been to produce costs of service that would reverse the price history of the last several years. Oil industry representatives have scoffed at the manifest circularity of such measures, under which the cost that is supposed to determine the regulated price is itself price-determined.¹⁶ But if the purpose of regulation be conceived more pragmatically as one of freezing pre-existing relative gas prices, costing on the basis of sales realizations makes sense. The only questions in that event are two. First, is there any point in going through the motions of ascertaining gas "costs," if all one wants to do is apply a freeze. The second is, how can one know that the price relationships that prevailed between gas and liquids at some time in the past are economically appropriate today?

The oil companies, forced to play the same game, have developed the convenient fiction that they are simply in the business of producing energy, and that cost may therefore be allocated among the various hydrocarbons on the basis of their respective B.T.U. contents. Since a B.T.U. of gas sells in the field for as little as one-fourth of a B.T.U. of oil, this method of allocation tends to produce a "cost of service" far higher than the new contract price of gas. Proponents of this method make a good deal of its freedom from circularity and the objectivity of its common denominator. But a B.T.U. is no more objective than a

¹⁶ They have also pointed out that if applied over and over again—the regulated price, based on cost, itself requiring a recomputation of cost, and so on—the method has the tendency to fix gas price at a level such that total revenues from oil and gas together return total joint costs plus the specified rate of return. See, e.g., Otto Eckstein, "Natural Gas and Patterns of Regulation," Harvard Bus. Rev., Mar.-Apr., 1958, pp. 129-31.

price. The cost it produces is at least equally a fiction: there is no logic in the assumption that it costs or should cost as much to raise a B.T.U. of gas as of oil. Sales realizations at least objectively reflect the actual respective contributions of the joint products to the joint expenses that produced them in the recent past; whereas a B.T.U. of gas in the field, far more costly to transport to market than oil and unusable as motor fuel, is most unlikely ever to be able to sell for as much as a B.T.U. of oil.

Faced with these extreme positions, the trial examiner in the Phillips case adopted with variations a more or less middle-of-the-road set of procedures proposed partly by Phillips itself, but primarily by witnesses representing a group of intervening eastern distribution companies.¹⁷ These consist of two parts, essentially. The first, the so-called "relative cost" method, allocates on-the-lease costs in proportion to the company's own relative costs of producing dry gas on the one hand and crude oil on the other, on leases where each is produced alone or practically so. Analogous to the alternative justifiable expenditures method applied by TVA, it has this additional appearance of equitableness: since it is ordinarily expensive to produce oil and impossible to produce natural gas liquids in the absence of gas, whereas there is no particular handicap to producing gas in the absence of liquids, dividing the joint costs in proportion to the actual costs of single-product operations has the tendency of giving gas customers a certain measure of "credit" for the important contributions their gas made to lifting the liquids. But it still does not produce an economic measure of cost.

Second, exploration expenses are allocated in proportion to the estimated current values of the gas and liquids uncovered by exploration over a representative period in the recent past. The attempt is to reflect the closest possible approximation to what the companies making the joint expenditures anticipated would be their reward from the respective joint products. To the extent that exploratory efforts are directional, this so-called "reserves-added-realization" method does produce some sort of approximation to cost in the economic sense, by reflecting the respective returns that motivated the separate searches. But for the most part it produces only a plausible basis for dividing what are apparently mainly true joint costs, on the basis of realizations, and therefore embodies the same circularity, hence freezing effect, as the use of simple sales realizations. It differs in this significant respect, however, that its logic requires the respective increments to reserves be valued at their anticipated future values as of the year the exploration was conducted; i.e., by something like new contract prices.

¹⁷ In the Matters of Phillips Petroleum Co., Docket G-1148 et al., Decision issued Apr. 6, 1959. The present writer was one of those witnesses.

The application of new contract prices has interesting consequences. It tends to freeze into the cost of gas its recent high prices. As a result, those costs sometimes turn out to be higher than the respondent company's actual average realizations. The price freeze, the method implies, is therefore not very effective. Its effectiveness is further attenuated with the passage of every year in which the FPC assiduously persists in a do-nothing policy. The circularity of a realization method of cost allocation thus cuts two ways: under regulation resolutely applied it tends to freeze pre-existing price ratios; under a regulatory commission that does not regulate, it tends to give the endorsement of a constantly rising cost to a constantly rising market price.

There is another way in which the circular relationship between costs and market price may make effective regulation more effective and ineffective regulation still less effective, and this one has nothing to do with allocation. A large part of book costs to the firm are of course economic rents—the investment in and amortization of both undeveloped and producing leaseholds, royalties, bonuses, delay rentals, the huge payments to federal and state governments for drilling privileges offshore, and so on. Effective cost-based regulation could at least hold down their future increase; but the laxer regulation promises to be, the higher will be these rents—costs to the individual firm—that future regulation will be forced to incorporate in the permitted price.

What conclusion can one draw from these observations about the problems of defining cost? In a joint-product situation such as this one, where there is no objective measure of cost, the method of allocation selected will reflect the implicit purposes of those who formulate it. If the purpose is to freeze, average unit cost can be held appropriately low. If the purpose is not to freeze, cost becomes little more than a rationalization of whatever course the unregulated market has been permitted to take.

In any event, it is impossible to ascertain cost of gas in the sense of discovering the minimum level of price required to elicit supply, except if the price of oil be taken as given. Apart from its own direct costs, the minimum price can be anywhere from zero upward, depending on how high the unregulated price of liquids could go to elicit the supplies of the joint products demanded at those respective prices. The cost of gas, in this sense, depends thus on the price of oil.¹⁸

Gas Regulation in the Context of Oil Regulation

The foregoing conclusion leads naturally to the one question which our presently fragmented and unco-ordinated system of regulation pre-

¹⁸ This dependence becomes explicit in the sales realization method, with the tendency for regulation therefore to control profits on the joint operation. See note 16, above.

sents no occasion for systematically considering: Is it sensible or even possible to control the price of one of two joint products while leaving the other strictly alone?

It is impossible to regulate the price of one joint product without having some effect on the supply of the other. A higher gas price means greater joint revenues and a tendency, given relatively free entry, for oil capacity to expand; a lower gas price has the opposite effect. Were the oil market truly competitive, it would follow that holding down the price of gas could only increase the burden on consumers of oil.

There is a second relationship between the two products that causes their regulatory fates to intertwine, but in an opposite manner. Natural gas competes directly and powerfully with the middle distillates and residual fuel oil. Holding down its price intensifies that competition.

These two opposing influences are both enormously modified by the fact that crude oil markets are comprehensively regulated. It would be the task of an entire paper, at least, to unravel all the implications of these various interventions for our present subject; but the voluminous controversies about regulating gas are so barren of reference to the regulatory situation in oil that even a bare mention of some of the possible interrelationships should be useful.

First of all, the federal income tax privileges extended to this industry and prorationing to market demand have conspired to create an immense and chronic excess oil capacity, running currently at least 3,500,000 barrels a day, or one-half of actual production. This surplus should gradually disappear; the slackening of exploratory efforts since 1956 is a belated response to it, and should in time have its effect. But it has not only persisted but become progressively aggravated since 1953, and the end is simply not in sight. In these circumstances it can hardly be maintained that effective control of gas prices would merely shift the burden from gas to oil consumers; or that freeing gas prices would bring corresponding price relief in oil. There already exists ample capacity at home and abroad to relieve oil consumers, if cartelization and import restrictions did not prevent it from doing so. In a cartelized oil market, a low price of gas is a more effective and reliable check on oil prices, by virtue of the competition between the two, than would be a high price of gas, tending to a further expansion of oil capacity.

Second, the depletion allowance and the privilege of expensing intangibles for income tax purposes attract capital uneconomically into gas as well as oil. According to the annual reports of the First National City Bank, the after-tax profits of the oil companies averaged 14.8 per cent on net book investment in the period 1947-58, a level scarcely higher than the 14.1 per cent reported by all manufacturing corpora-

tions.¹⁹ But on the basis of the relationship in 1957 and 1958 between before- and after-tax profits of the thirty-two oil companies regularly surveyed by the Chase Manhattan Bank,20 these ratios correspond with before-tax earnings of only 19.5 per cent in oil, compared with no less than 28 per cent in manufacturing generally. These tax arrangements route capital into the industry far beyond the point where its marginal product is equated with that of alternative uses.²¹ In so doing, they tend to keep the price of gas as well as oil uneconomically low and to encourage its excessive utilization.

The significance of these tendencies for gas regulation is complicated. On the one hand, they suggest that it is undesirable to compound the waste by holding the price of gas even lower than the level to which this tax-induced overinvestment tends to depress it. If the consequence of a higher gas price may be an accentuation of excess capacity in oil, the effect will also be a better balance between supply and demand of gas. On the other hand, our present policies already encourage an excessive devotion of resources to this industry. To free the price of gas while retaining these other distorting influences will aggravate rather than mitigate this misallocation.

It may not make much sense to try to hold down the profits oil companies make on their gas operations alone, because the only meaningful profits they earn are on their joint operations. But since gas competes with oil, letting its price rise further strengthens the price of oil, already artificially sustained by prorationing and import restrictions. Similarly, it may not make much sense, in fixing the price of gas, to consider the sufficiency or superfluity of the aggregate flow of capital into this industry. By the same token, however, one cannot logically argue the need for a "free market" in gas, in order to ensure the proper inflow of capital, while closing one's eyes to the other powerful inducements that make this inflow already excessive.

If these other distortions were eliminated, or modified, it would make a good deal less sense than it now does for the government to hold down

¹⁰ Cited by Richard J. Gonzalez, "Percentage Depletion for Petroleum Production," presented to U.S. Congress, House Com. on Ways and Means, Dec. 1, 1959. The profits of oil companies are particularly difficult to interpret. The above figures are probably somewhat understated by the practice of charging off as expenses some costs that would be capitalized in other industries, and by the heavy representation of integrated oil companies with nonproducing operations. On the other hand, the reporting producing companies understand the producers together.

panies with nonproducing operations. On the other hand, the reporting producing companies undoubtedly did much better on the average than all producers together.

²⁰ Profits on equity were 17.2 and 12.6 per cent before and 13.0 and 9.5 per cent after taxes in these two years, respectively. Computed from F. G. Coqueron, *Petroleum Industry*, 1958 (Chase Manhattan Bank, 1959), pp. 9, 11, 37.

²¹ Gonzalez points out correctly that a balanced appraisal would have to pose against the effect on resource allocation of these federal income tax provisions the effects of the numerous other special taxes levied on oil, gas, and their products. In so doing, one would have to decide to what extent, if any, such taxes exceeded all the social costs, direct and indirect, of servicing the motorist and imposed by him. In any event, it is not clear that one irrational tax justifies another. one irrational tax justifies another.

the price of gas. First of all, competition among refiners could then be counted on to pass on to homeowners and industrial consumers, in lower prices, the benefits of excess domestic capacity and lower cost foreign oil. And this intensified competition would in turn moderate the price spiral in gas. Second, as excess domestic oil capacity declined to whatever minimum level considerations of military security dictated, it would then be appropriate to leave to the price system the function of providing the incentives necessary to elicit the supplies demanded at those free-market prices. It might then be particularly appropriate to let the price of gas move up, because any rational resources policy (and freer competition) would lead us to rely far more than we do today on foreign sources of oil. In that event, gas would have to bear a greater share of the joint costs of domestic production than it now does, and correctly so.

The time may be ripe to consider a more fully competitive way of life for this industry. Melvin de Chazeau and I have suggested such a possible program for oil.²² If put into effect, it would not eliminate the imperfections of the gas market—notably the long-term contract and the possibly highly concentrated control over incremental supplies. But it would greatly strengthen the case, both economic and political, for letting the market assume the primary responsibility for regulating the course of this industry—a responsibility it shares today with many many agencies besides the Federal Power Commission.

²² Integration and Competition in the Petroleum Industry (Yale Univ. Press, 1959), Chap. 10.

DISCUSSION

Burton N. Behling: Although Dr. Nelson's subject title is "effects of public regulation on railroad performance," his paper is concerned in large part with other aspects of the environment in which the railroads operate. I point this out, not as criticism, but commendation of what must have been his thought, that a better perspective is gained when the consequences of regulation are considered along with other important factors affecting the railroads and their difficulties.

Since the assignment given to me is a roving one, and since Mr. Webster says "to rove" means "to ramble," I have seldom been provided with so well-prepared an alibi to digress. However, I see no reason, nor much opportunity for that matter, to stray beyond the wide boundaries of Dr. Nelson's comprehensive presentation. So, without attempting within the time limits to comment on all the points he has made, allow me to offer a few observations as extension of remarks with perhaps some incidental variance.

Stating that "the railroads already have largely been displaced" in the transportation of persons, Dr. Nelson cites familiar statistics showing that the rail share has dropped to about 3 per cent of total intercity passenger-miles and to less than one-third of common carrier travel. While it is certainly not my purpose to contend that such evidences of decline are anything less than serious, I do suggest that exclusive attention should not be given to statistics on passenger-miles. It should not escape notice that, despite severe and persistent declines in rail passenger business, the railroads in 1957 and 1958 still carried (exclusive of commuters) nearly three and a half times as many passengers as did the flourishing domestic airlines. This large volume seems significant in considering the present and future of dependable and attractive railroad passenger service and its importance to the traveling public. A rail passenger from Boston to New York or from Chicago to Minneapolis, although his trip is shorter, probably does not consider it any less significant on this account than another's much longer flight from New York to San Francisco.

On the subject of compensatory user charges for operations on public facilities by rail competitors, to which Dr. Nelson refers in discussing factors which artificially distort resource and traffic allocations to the disadvantage of the railroads as well as the transport economy generally, there is time for only limited additional comment. Progress toward more sensible economic policies in this area has been extremely slow. Such hesitancy seems all the more inexcusable when it is recognized that even if fully compensatory user charges were to be made generally effective, those who are privileged in their private capacities to operate on publicly provided facilities without the costs and risks of right-of-way ownership and upkeep would still be in a competitively advantageous position relative to the railroads who provide, maintain, and pay taxes on their own basic facilities. As just one manifestation of this difference, we find cost analyses still being made by government agencies using a rate of

2½ per cent as the interest component of costs for projected public investments. Such understatement of economic costs provides a built-in bias toward public investment against private capital investment, not only with respect to transportation facilities, but in other sectors of the economy as well.

These thoughts came to me as I read what Dr. Nelson has to say about the pricing of railroad services and the slowness of regulators to recognize the role of competitive pricing. The continuing efforts of economists, including in particular persons here in this group, are helping to focus attention on this problem in a constructive way. My second thought was that the "old masters" of rate theory who labored half a century or so ago laid a basic groundwork for railroad cost-and-demand analysis which is essentially pertinent today when properly considered in the light of changed conditions in transport markets. In view of this it seems all the more remarkable that those regulators who by background and experience should have comprehended well the significance of changing circumstances have, until recently at least, remained so resistant to change and adaptation. The regulators themselves have proved as unmistakably as it would be possible to do that there should be less reliance upon their arbitrary and sometimes irrational decisions and more upon the market economy in transportation.

Similar backwardness is encountered in laws and regulations which have kept the agencies of transport so rigidly in separate compartments. Dr. Nelson suggests that such barriers to diversification may have been carried too far. I would add the observation that policies and attitudes based so much on fear—in this case exaggerated fear of monopoly generated by transport modes seeking for their own purposes to freeze advantages they enjoy from the *status quo*—are not likely to be sound policies.

Throughout Dr. Nelson's paper it is implicit and sometimes he makes it explicit—when he refers to subsidies to rail competitors, undue regulatory rigidities, technological lags, inefficient use of manpower and facilities, and the other matters he discusses—that they all boil down to this result: The nation's total transportation bill is, because of the conditions cited, greater than it ought to be. This is, of course, what inefficiencies and distorted allocations of resources and traffic really mean. If we as economists would emphasize more in direct terms the issue of excessive total costs for transportation, perhaps those who have the responsibility for political decision making would be more likely to take heed and be moved to act.

Dr. Kahn has given us a very penetrating review of the muddled attempts at price regulation of gas production on the basis of a freeze motive and various schemes aiming to measure cost in this joint-cost situation. From his analysis my own impression is confirmed that regulatory tinkering in this area has not improved with age in the dozen years since I had close contact with the problem. The duration of this experiment in price fixing seems significant and presents the question, I would think, of how much longer it will take as a matter of policy to recognize the futility and harmful consequences of it. Nor do I see merit in the proposal, which I am not attributing to Dr. Kahn, that extension of price regulation to include oil as well as gas production would be the appropriate step to take.

ROBERT W. HARBESON: The declining share of the total freight and passenger traffic handled by the railroads and the accompanying decline in the financial health of the industry as a whole have been a source of increasing concern to regulatory and legislative bodies, transportation students, and the general public. We are, therefore, fortunate to have Professor Nelson's fresh and able treatment of this timely topic.

I emphatically agree with Professor Nelson that the decline in the railways' share of the total traffic volume has been greater than is warranted by the relative cost of movement by railways and other agencies of transportation and that this situation should be corrected in the interest of optimum functioning of the economy. Professor Nelson finds the causes of the railways' difficulties to lie in public regulatory policies, government promotional and subsidy policies, and management policies with respect to pricing and the utilization of labor and equipment. I should like to add a few amendments and qualifications to this general diagnosis.

First, I believe that some reference should be made to two topics not treated by Professor Nelson. One is the matter of differences in tax burdens borne by the various agencies of transportation. The Carrier Taxation Report of the Board of Investigation and Research found that as of 1940 oil pipelines, intercity bus lines, and railroads were relatively overtaxed as compared with intercity truck lines, water carriers, and airlines. While no similarly comprehensive study has since been made, it would seem to be a safe guess that the position of the railroads relative to other agencies of transportation with regard to tax burdens is not materially better today than it was in 1940. An outstanding example of the inequality of tax burdens is the discrepancy between the payroll tax of 634 per cent paid by the railroads to finance retirement benefits under the Railroad Retirement Act and the 3 per cent rate for the same purpose which will be paid in 1960 by competing agencies of transportation subject to social security. Likewise the ICC in its Passenger Deficit Investigation included relief from inequitably high state and local taxes as a necessary part of a program for maintaining rail passenger service. Although differential tax burdens probably have substantial adverse effects on railroads and on the allocation of resources among agencies of transportation, the subject was not considered by the Cabinet Committee, nor is it mentioned as a matter to be investigated under the pending Senate Resolution 29. Reconsideration of policies of carrier taxation should no longer be postponed.

Another topic not considered by Professor Nelson is the bearing of the declining traffic and financial position of the railroads upon national security. There are those who argue that the status of the railroads is a matter of indifference from this standpoint, partly on the ground that the requirements of war and mobilization can be met as satisfactorily by other agencies of transportation as by the railroads and partly on the ground that the next war will be fought with nuclear weapons which will decide the issue in such a short time that the adequacy of the transportation system could scarcely be of decisive importance. On the other hand, if one disagrees with this reasoning, as I do, measures to insure that the railroads handle a share of the total traffic commensurate with their inherent advantages take on added urgency. However,

must have some effect on capacity expansion. How does all of this work under public-utility-type regulation?

The economic rationale of the public-utility type of regulation is to bring about in a monopoly a level of prices relative to costs that will approximate that of a competitive industry in long-run equilibrium. Associated with such prices will be the investment in capacity and the output rate called for by the demand at that price: indeed, this capacity can be required of the regulated firm(s). What the standard for rate-setting amounts to is imposing on the monopoly (a single seller or a very few firms) the average profit rate to be expected for the numerous firms of a competitive industry. In practice the prices set reflect primarily the cost and revenue data of the recent past.

This regulatory standard and technique have worked well where the following conditions have existed: (1) where the firm(s) has (have) unexploited economies of scale or, at worst, costs are in the constant range; (2) where fairly accurate predictions can be made of the added output and revenue that will be yielded by inputs that are large in size relative to the size of the firm; (3) where the cross-elasticity of demand between the regulated product or service and unregulated substitutes is low; (4) where the production of the regulated commodity or service is not seriously intertwined with that of other products or services; and (5) where the secular trend of demand for the regulated product or service is rising. Of these conditions, only the last and possibly the third hold for natural gas.

Where the first four conditions exist, no serious problems arise (other than that of a lag in price reductions perhaps) as long as demand is growing. The regulatory errors that are adverse to enterprise, and hence to the rate of investment that will reach or maintain the long-run equilibrium, become livable through realizing more of the potential scale economies. Because of that, the firms are willing and able to obtain the needed capital under a fair-return-on-a-fair-value regulatory doctrine.

But where demand for the product or service has not been growing—worse if declining—or regulatory policy has barred the firm(s) from realizing the economies that even installed capacity could provide, as with the railroads in recent decades, regulation has failed miserably. In such cases the new demand situation often reflects the development of substitutes, say for railroad transportation, some of which are regulated but not as part of an intergrated national transportation program. For railroads the third condition above no longer holds.

With natural gas being an increasing-cost industry, the expansion of demand complicates rather than eases the problem of price setting. Historical cost data will not usually be an accurate guide to the prices that will encourage capacity expansion. At what point above historical costs prices for new, and in the absence of fortuitous discoveries, higher cost supplies must be set to encourage investment is extremely difficult to specify as will be shown in a moment. If set too low, the error will not be corrected by realizing more of the economies of scale as could quite likely be the consequence in electric power production, for example. If set on a liberal basis, how far will the prices be below those that would be established in unregulated bargaining?

These difficulties are compounded by the fact that, in contrast to the second condition listed above, the returns from particular investments in exploration for or development of new gas deposits may vary from a complete loss of the funds to very large windfall gains. Even some predicted average cost for new supplies—if there is a basis for such a prediction—plus a utility-type return, would hardly stimulate the degree of "directional" exploration and development that would occur if returns from outlays could be predicted with a small margin of error. While, as Kahn says, exploration is "nondirectional," the prospective income from oil plus gas must affect the search for new fields. In the directional development of a discovered field there remains a wide variation in amount of gas reserves tapped per dollar of investment.

Now to complicate further the search for a cost-based administrative standard, and even before facing the problem of joint costs in oil and gas production, apparently the relevant costs are to be those of individual firms and not of particular fields. Yet the cost differences, historically and prospectively, are set by nature and not by the human institution of ownership units. Added to the uncertainty as to the amount of gas reserves that will be discovered or developed from a given outlay, is to be that of what price will be set. But that, it seems, is to reflect who the company is. Just how that is to be related to its past costs of all gas it produces, or of recent additions to reserves, or of prospective additions, is not clear. If the producer already has high profits from gas production (old and new together, or recently new only, which is not clear) the price on the further-developed supplies might be low. The converse might hold if the producer's profits were low. A new producer's prices would be "in-lined" with that of old producers. But each of the latter that operates in a given field could have a different price because of its over-all earning rate on the relevant part of its gas production! Who is to have what price? Where and how will capacity additions be encouraged? Or is all of this elaborate cost analysis merely window dressing and administrators forced to set prices by some non-quantifiable standard that they "judge" to be appropriate?

After such doubts about the consequences of a cost standard as applied to natural gas production, it is anticlimactic to talk about allocating the joint costs of gas and oil production by some proxy variable. Here the contrast with the fourth condition that facilitates regulation comes to the fore: the costs of gas production, certainly in any way that is related to the problem of capacity expansion, are joint with those for oil. That the latter happens to be subject to a degree of regulation, and according to other criteria, further complicates the use of any proxy variable as Kahn shows at length. But does this make any difference if, in the end, any figures arrived at are merely the means of giving an appearance of concreteness to the basis of administrative decisions that cannot be more than guess-estimates made in the context of enormous pressures from both sides?

Can a regulatory agency find its way through this maze and reach some (as yet not clearly) indefinable goal that is understood and approved by the public? The mere fact of regulation does not assure that public welfare will be enhanced. Where faced by such a maze, the market system has demonstrated that routes can be mapped by firms and individuals and price-cost-output rela-

tions established that are orderly but do not necessarily reflect maximum welfare to consumers. Often when regulatory agencies have had to deal with a maze, the result has been a mess. In this case, it is quite possible that ineptitude or errors of design will be less apparent than in railroading, for example. Prices that discourage investment in gas production will only mean delays for shorter or longer periods in supplying added consumers. Rate or price setting by nonobjective criteria—and the gist of the above discussion is to doubt the feasibility of an objective standard—is footloose, and it will be difficult for the public to know about or to judge the propriety of what emerges.

That such is the inherent difficulty of regulation does not, per se, mean that the regulation should be abandoned. But to the extent that action is needed, the other avenues—whether in the antitrust field, the divesting of the pipeline companies of their gas holdings, or changes in taxation—become more appealing. In choosing among alternative courses of action one must think simultaneously about oil, but just where that leads is not yet clear. I sense that Kahn has no full-fledged program at this time.

RESEARCH ON THEORY OF THE FIRM SEQUENTIAL DECISION MAKING IN THE FIRM

By Julius Margolis University of California, Berkeley

The recasting of economic theory as decision making under uncertainty is becoming increasingly popular. Though this paper is very much concerned with uncertainty it does not deal with models based on statistical decision theory. Rather than uncertainty I shall refer to ignorance—a stronger term. The concept of a decision will be broadened to a sequence of decisions. Therefore we will be talking about sequential decision making under ignorance. By sequential decision making under ignorance I refer to the situation where a firm must act, though the management cannot specify the probability distribution of the consequences of their actions. The actions taken today alter tomorrow's information and thereby tomorrow's decisions. Therefore, rules for business decisions are to be considered as part of a sequence of decisions.

Today's actions affect future decisions in two dimensions: (1) The commitment of resources along one line will affect the conditions of production in the future. (2) The actions will have results which are valued both in terms of their direct effects on profits and also for the additional information which they provide about the world surrounding the firm. This cumulative information will affect costs and policies. This interplay between actions, information, and revisions will not be examined in a formal model. Even for the restricted and intensively studied area of inventory management "the combination of estimation and decision-making in an inventory problem is a complicated sequential decision problem which has not yet been explored." Instead I shall examine one policy of the firm, full-cost pricing, to see how the image of a firm as making sequential decisions under ignorance can help clarify a much-debated point about the firm's behavior.

In recent years there has been a lively development of the analysis of uncertainty in decision making by economic units. Uncertainty considerations have never been absent from the studies by economists, but in the past they have too often been inserted as reservations on an analysis which was carried out in great detail and rigor on the assumptions of complete knowledge. Successive static decision-making models

¹K. J. Arrow, S. Karlin, and H. Scarf, Studies in the Mathematical Theory of Inventory and Production (Stanford, 1958), p. 24.

have been elaborated with the introduction of random terms in the equations. The decision-maker is supposed to study the probability distribution of future states of nature and of the consequences for him of alternative actions. Then it is presumed that he chooses the alternative which would permit him to maximize his expected profit or utility. Clearly these developments in theory construction have been rewarding. Not only have they added a new dimension to theory construction, but they have proven very fruitful in normative analysis—the improvement of prescriptive rules for the firm. Optimal inventory management has gained considerably from these developments. Though it is likely that similar gains will be found in many other management areas as probability distributions replace certain events, this approach to the analysis of uncertainty in business decisions has only limited usefulness. Unfortuately, the same excitement has not been generated around other aspects of uncertainty.

Despite the impressive reasoning surrounding the models which have followed the development of statistical decision theory, business managers frequently resist casting their own thinking in these terms. Part of their resistance might be attributed to conservatism but undoubtedly part must be attributed to the simple-minded assumptions about the behavior of individuals or firms under conditions of uncertainty which underly the analysis. Clearly, far more complex models of the firm are necessary to explain its behavior and to be the basis for prescriptions for the firm.

Though the economists' formal treatment of uncertainty is of very recent vintage, the businessman has always been concerned with the problem of uncertainty as part of the general problem of reliable information. Business units have developed an extensive body of practices and rules which are partially a reaction to the need of operating with insufficient information. Generally these practices are criticized by economists as wasteful. But these criticisms of institutions created by firms or rules adopted by firms are based upon analyzing the consequences of the use of the rules if they were adopted in an economy operating under certainty. If uncertainty is introduced into the model, the characterization of inefficiency is not as apparent. At the least, behavior should be studied with more awareness of the dependence of behavior on uncertainty so as to get a more apt description.

The rules and conventions adopted by the firms as the basis for decisions are best understood as part of strategies. A strategy can be distinguished from a decision in that a strategy encompasses a sequence of decisions where future decisions are contingent upon future information. The present decision is partially determined by its consequences for future decisions. The economic analyst generally evaluates a de-

cision rule on the assumption that the firm is choosing an alternative action to which it remains committed. The firm, in contrast, is making a decision in the light of the fact that the consequences of its actions will bring in more information which will affect later decisions. The uncertainty of the future environment will certainly affect the strategies of firms and thereby the rules and institutions which they create.

The approach to ignorance which is most amenable to the traditional model of the firm is to find a variable which has a cost which varies directly with information. Then it becomes simple to assert that the firm will increase the inputs of the variable so long as the marginal cost of the variable is less than the marginal profitability attributable to the additional information. This type of rule has been proposed for research expenditures. This rule which permits the lack of information to be converted from a deterrent to rational behavior to a problem of resource input under certainty evades the entire problem. Though management will debate the virtues of research they have only the vaguest ideas of its profitability. More importantly, research which takes the form of the accumulation of information prior to a decision plays a very limited role. Knowledge of the future operations of the market within which the firm must operate is so limited that the little knowledge added by predecision research is of relatively slight value. Even within the classic areas of research—improvements in technology—in cases of great ignorance it is found that it is often best to build and try rather than continue to develop the drawing-board designs.2

The actual decision-making process adopted by firms is more similar to the research engineer who builds, operates, and revises rather than the engineer who analyzes with a system of equations or a simulator model. For the economic analysis of the firm we are just beginning to develop a language to describe the behavior pattern of a firm which proceeds in a sequence of tentative moves.

The classic contribution to sequential decision making as a strategy is the often quoted paper of Hart.3 Unfortunately the fruitful line of research that he pointed out has not been followed. He attributed "the fact that the expectational approach has not raised the flag of sovereignty over a large area of former theory [like the monopolistic-competition approach, or the differential-equation-dynamic approach] ... to the difficulty of formalizing the way expectations are formed."4

Since then developments in related areas give hope that significant advances in this area are soon to be realized. The rapid adoption in

⁴ Ibid., p. viii.

² R. R. Nelson, "The Economics of Invention: A Survey of the Literature," J. of Bus., Apr., 1959; B. H. Klein, W. H. Meckling, E. G. Mesthene, Military Research and Development Policies (RAND Corp., R-333, Dec. 4, 1958).

³ A. G. Hart, Anticipations, Uncertainty and Dynamic Planning (Kelley, 1951).

popular and learned journals as well as textbooks of the minimax criterion is symptomatic of the recognition of the importance of a strategy imposed by the hope to increase profits while acting in a world with many disastrous possibilities. The formation of anticipations is approached more directly in the work in organization theory. There, a language has been developed to study the problems of the patterns of search for goals and alternatives, the tension between aspirations and satisfactory outcomes, the organizational constraints, the learning process, etc. In this loosely organized field, economists, psychologists, engineers, sociologists, and statisticians have been concerned with a variety of issues many of which have bearing on the processes of information gathering and the behavior of the firm. In the economic literature proper, there has been a reluctance to abandon a profit or utility maximizing framework but issues of information, strategies, and adjustment patterns have begun to be discussed.

To see how the view of a firm's decision as part of the sequential strategy helps clarify our understanding I shall examine one conventional rule of firms: full-cost pricing. It is generally agreed that a great many firms when asked to describe their pricing practices outline a full-cost pricing procedure. It is possible that they responded in a symbolic manner—that full-cost pricing procedure is no more than deference to traditional language and that somehow rules which lead to maximum profits are being followed or that businessmen are grossly mismanaging their firms. Both of these possibilities seem unreasonable. It would be more sensible to assume that the procedures do have relevance to decisions and that the leaders of firms are fairly intelligent, albeit lacking in the information sketched in the expositions of the theory of the firm. Since we often find that full-cost pricing in practice is seemingly modified to agree with a profit maximization hypothesis, the analysis must explain full-cost pricing and its modifications.

Consider the introduction of a new product—a case where the lack of information is the greatest. The procedure of full-cost pricing is the following. The firm estimates a "normal" volume of production for the new product. It computes the direct manufacturing costs for the product, adds an allocation of overhead production expenses, distribution expenses and overhead administration. To this total it will add a profit

⁸ J. G. March and H. A. Simon, Organizations (Wiley, 1958).

⁶ H. A. Simon, "Theories of Decision-Making in Economics," A. E. R., June, 1959. In addition to the references cited in Simon there are the papers of K. J. Arrow, "Statistics and Economic Policy," Econometrica, Oct., 1957, and "Toward a Theory of Price Adjustment," in the Allocation of Economic Resources, Essays in Honor of B. F. Haley (Stanford, 1959); G. B. Richardson, "Equilibrium, Expectations and Information," Econ. J., June, 1959; J. E. Haring and G. C. Smith, "Utility Theory and Profit Maximization," A. E. R., Sept., 1959; J. Margolis, "The Analysis of the Firm; Rationalism, Conventionalism, and Behaviorism," J. of Bus., July, 1958; M. Shubik, Strategy and Market Structure (Wiley, 1959).

allowance which will allow it a profit rate of return equal to what it would like to earn. The normal volume of production is estimated either by the sales staff computing the volume of sales at a price which they think the market can take or by the engineering staff estimating the volume at which the unit costs of production can be brought to a reasonably low level. For the economist armed with the traditional static model, this procedure is completely irrational. Since possible increased profits associated with a different price have not been considered, profit possibilities will have been neglected. But let us analyze the circumstances surrounding the use of the rule, the principles of determining the full costs, and the strategies of pricing with the rule.

The introduction of a new product is highly hazardous. The firm is uncertain about the characteristics of the product which will appeal to the market; it is not clear about the most appropriate market channels to adopt; it is not sure about what their costs of operations might be; it is uncertain about the reactions of their competitors. Despite these uncertainties, it can make several resonable assumptions about the world and thereby select a strategy of behavior in this uncertain world.

In regard to the conditions of demand, it can assume that it has not designed the optimal product. Therefore the likelihood of the acceptance of the product by a mass market is slim. Over time the product characteristics will be revised. Further, the mass market, even if it should exist, would develop slowly. Any new product, if durable, may not be adopted until older competitive products have been worn out. Purchases of new products are often inhibited by the need to purchase or alter complementary goods. The new product will have a smaller market.

Joint with the smallness of the market is the likelihood of an inelastic demand curve. The household's information about the utility of the new produce is slight. The household cannot effect any careful balancing of costs and utilities of the new and the older products given the great uncertainty of the value of the product. The household thereby will be less sensitive to variations in price as an inducement to purchase. The newness of the product enhances its novelty features which will attract those who are conscious that the purchase is an experiment. An experimental purchase will not be explained by an equilibrium type of adjustment which equates ratios of marginal utilities to costs for all commodities. All in all, the market for a new product is small and the price elasticity of demand is very low. But the expectation of the entre-

⁷ A. J. Bergfeld, J. S. Earley, W. R. Knobloch, *Pricing for Profit and Growth* (McGraw-Hill, 1957), pp. 87-88. R. B. Heflebower, "Full Costs, Cost Changes, and Prices," in *Business Concentration and Price Policy*, A Conference of the Universities-NBER (Princeton Univ. Press, 1955).

preneur, who is innovating, is that the market as well as the price elasticity of demand will become greater over time. The assumption of the future developments on the side of demand are critical in understanding his pricing behavior. Whatever price he establishes must be sensible from the point of view of the current market and the position it puts the firm in relative to the market of later periods.

The analysis of the marketing possibilities also affects the estimates of costs. The traditional model assumes an independence in these two functions, but they are related through the degree of uncertainty surrounding the demand curve. The cost estimates are a compound of the engineering production estimates and the accountant's assignment of fixed and joint costs to the time period and product. Both are affected by the analysis of demand.

Production costs are partially affected by the confidence of the firm in its ability to sell the product. The more uncertain the firm is of the product acceptability, size of market, and the result of competitors' behavior the less likely they are to construct a new factory, hire additional staff, and purchase new machinery which are best designed to produce the commodity. There is a range of productive processes which can be scaled by efficiency. One process might use standby equipment designed for other products, an unoccupied corner of the factory, and workers who could best be spared from other activities. Another process might utilize additional resources but only those which could be converted to the production of other products so as to ensure some salvage value for the equipment. A process closest to the plans of the engineer would require specialized equipment and talents to achieve lowest manufacturing costs. The greater the certainty surrounding the marketability of the product the more likely will be the choice of an optimally designed process and the lower will be the direct production costs. Increasing uncertainty will result in an enhancement of the value of flexibility and less commitment.

Joint costs in the period of evaluation will be affected similarly by the degree of uncertainty. The amount of fixed costs is highly dependent upon the period over which the capital costs are to be allocated. The shorter the period, the greater the fixed cost charge per year. The greater the uncertainty of marketability, the shorter will be the planning horizon and the greater will be the allocated costs per year. Therefore the greater the uncertainty, the greater will be the variable costs because of a reluctance to commit the firm to best processes and the greater will be the fixed costs because of a shortening of the planning horizon.

The implications of the above are that the greater the ignorance of the market the higher will be the estimate of the costs and the more inelastic the estimate of demand. What price should a firm charge if it has hopes of later expanding its market? The higher the price the greater the expected short-run profits and the greater the sacrifice of expected information about the mass market. The lower the price the more information it gains about the future market possibilities. But the greater the ignorance of the market the more valuable is the information about the ability to succeed in the short-run with the current commitment. Therefore ignorance is conducive to quote a price equal to the full-cost estimate since it is the condition of the market at this point which is most important for survival.

Over time, the firm accumulates information about its demand curve as well as its cost curves. Movements of its inventory give it information about the consumer acceptability of different features of the product. The engineering staffs provide new estimates of costs as there are improvements in managerial practices and a better selection of appropriate industrial processes over time. If the product has been successful, costs are reduced and a more elastic demand curve emerges. Improvements about the design of the product are possible with the additional information.

The improved products are introduced under the conditions of reduced cost curves and more elastic demand. The implications are that they would under even full-cost pricing have a lower price. But the replacement of the old product by a new product at a lower price would not necessarily be an optimal move. If they could retain their hold on the high-price market and introduce a "lower quality" product at the lower price, their profits would be still higher. It would be advantageous to them to introduce a line of products appropriately differentiated so as to reduce the cross-elasticity of demand among the items in the line. Product differentiation is as important for the range of product produced by one firm as for the competition of products of rival firms. If a lower line is introduced, the firm would have inaugurated a price discrimination scheme. Full-cost pricing would no longer seem to be operative. The markups of the two products over variable costs would have become different. And this is what we find among firms.

The resulting discriminatory price structure is not by any means the same that we might expect from a comparative static analysis. The structure developed through history. The history consisted of unique events which provided specific information in response to exploratory moves by the firm. Various moves resulted in satisfactory consequences and they were retained. Some provided information for further moves. The decisions are constrained by the existing and projected costs where the firm is concerned whether the results will at least cover the full costs and whether they will enable the firm to do still better at subsequent

moves. Though the model of full-cost pricing is used, the specification of full costs is not rigid. Many strange and artful methods are used by which to allocate overheads and to assign profit margins. The business literature is full of statements that the markup is reduced if competition is more severe; or the allocations are lower on a "by-product" or an additional line which is using some of the "excess capacity"; or the overhead is allocated according to price. Clearly the above guides to a best markup on direct costs reflect the importance of actual demand elasticities. This does not mean that the firm directly estimates the elasticities. The demand elasticities affect the cost and volume estimates and through them they affect price decisions. The appropriate decisionmaking model would be to assume ignorance and several modes of formation of anticipations. To analyze how anticipations are formed and then revised, the model of the firm should specify the learning process of firms, their paths of adaptation, the conventions they follow. We are just beginning to develop the language for these models.

SIMULATION OF THE FIRM

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Introduction

Within the past decade there has been a steadily increasing use by operations researchers of computer simulation techniques in studying complex industrial and military systems. Economists are now beginning to recognize that similar techniques may be helpful in analyzing complex economic systems. The purpose of this paper is to consider some reasons why simulation may be a useful addition to the professional economists "bag of tools," especially in research on the theory of the firm. Since relatively little substantive work in simulating microeconomic models has been published to date, our assessment of the role that this new methodology may play in developing the theory of the firm must be based on programmatic considerations rather than on achieved results.

We use the term "computer model" to denote a special kind of formal mathematical model; namely, a model which is not intended to be solved analytically but rather to be simulated on an electronic computer. Simulating a computer model consists in using a digital or analog computer to trace numerically or graphically the time paths of all endogenous variables generated by the model.

Questions to Be Answered by Models of the Firm

A model is an abstract representation of some part of the world. In formulating any economic model, it is useful to bear in mind the questions which the model is intended to answer. Otherwise we may err by including either so much detail that the model is ponderous and inefficient or else so little detail that the model is inadequate.

In asking how abstract or how realistic a model of entrepreneurial behavior should be, we must specify the kinds of analysis for which the model is intended. Models of the firm might be desired for answering a wide variety of questions, ranging from, at an aggregate level, the de-

¹A broad survey of the scope of operations research simulations can be found in the Report of the Systems Simulation Symposium, D. G. Malcolm, editor (Amer. Inst. of Ind. Eng., 1958). The number of operations research simulation studies which have been discussed in professional meetings or journals is too numerous to permit us to undertake here any further discussion of them (e.g., at the 16th Nat. Meeting of the Operations Res. Soc. of Amer. in Pasadena, Calif., Nov., 1959, there were approximately twenty papers presented dealing with computer simulation).

termination of national income, to the functioning of a price system in allocating resources among markets, to the division of industry output among firms to, at a microscopic level, the internal allocation of resources within a single firm.

Economic models which are designed to answer one class of question may be inadequate or inappropriate for answering questions involving a different level of aggregation. The neoclassical theory of the firm has been designed primarily to answer questions concerning ways in which resources are allocated among industries within a free price economy. While the neoclassical model may be quite adequate for this purpose, there are, of course, large categories of interesting economic questions which cannot satisfactorily be answered by this model.

A useful working rule for economists in formulating models of the firm is that the lower the level of aggregation at which the class of phenomena in which we are interested occurs, the greater is the amount of complexity and detail concerning the behavior of firms which should be incorporated into our microeconomic models. Increasing the amount of detail embodied in the model entails, of course, an increase in the difficulty of both formulating and manipulating the model.

Advantages of Computer Models for the Theory of the Firm

The main advantage of using computer simulation as a tool in economics is to provide a concrete procedure for formulating and testing hypotheses. A frequent objection raised against traditional mathematical models of economic systems is that these models are too unrealistic for their intended purposes. This is often true, because adding realism requires adding complexity as well. Since traditional mathematical models are intended for analytical solution, their complexity and realism must be severely limited. Computer models, however, can be made as complex and realistic as our theories permit, for analytical solutions to these models are unnecessary. No matter how complicated the formulation of the model, simulation techniques enable us to trace the consequences inherent in it. Hence, microeconomic theories can be cast into precise models without distortion of the meaning embodied in these theories, and the description of the world implied by such theories can be readily determined.

Formulating economic theories in terms of computer models provides opportunities for working with formal models to nonmathematical economists. People need not be powerful mathematicians in order to build and run computer models. It requires a much more extensive knowledge of mathematics to obtain an analytical solution to a complex mathematical model than it does to formulate the model. When simula-

tion techniques are used, however, once the model is set up, the rest is relatively easy.

A further advantage of computer models is the ease of modifying the assumptions of the theory. When suitable programming languages become available, relations can be inserted, deleted, or changed in the model, and only local changes, which can be quickly made, will be required in the computer program. Modifications of this kind will have a much smaller effect on the procedures for simulating a formal model than they would on the means used for obtaining analytical solutions to the model.

Computer process models can provide much greater insight into the dynamic implications of economic theories. Understanding the nature of the behavior through time of economic forces may someday become synonomous with being able to program and simulate the processes determining the behavior of these variables.

The use of computer simulation techniques seems especially well adapted to the development of behavioral models at a microeconomic level. Trying to formulate a detailed computer model of the actions of individual households or firms spotlights the kind of empirical information needed to obtain a better understanding of these activities. It is only when all of the detailed aspects of entrepreneurial decision making can be programmed and simulated successfully that we will have a behavioral theory of the firm—"a theory that takes the firm as its unit of study and the prediction of firm behavior with respect to such decisions as price, output, resource allocations, etc. as its objective."²

Implications for Aggregate Economic Models

Even for those economists who are not fundamentally interested in the internal operations of firms, it is quite possible that a much more intensive study of individual entrepreneurial behavior may furnish a very useful basis on which to formulate aggregate models of the economic system which could provide better forecasts of over-all economic behavior than we are now able to produce. In such an approach to macroeconomic forecasting, we would first have to formulate a variety of models at a microeconomic level which explain the individual actions of specific firms in the economy. In order to obtain adequate descriptions of the behavior of individual firms, it might conceivably be necessary to have as many models as there are firms; i.e., a special model for each firm. We doubt that this will be the case, however. Probably a relatively small number of basic models, perhaps something in the

² R. M. Cyert and James G. March, "Introduction to Research on a Behavioral Theory of the Firm," Behavior Theory of the Firm Project Working Paper No. 1 (Grad. Sch. of Ind. Admin., Carnegie Inst. of Tech., Oct. 17, 1957).

order of a dozen, will adequately describe the relevant aspects of each individual firm's actions.³

Information must also be obtained regarding the number of firms in each sector of the economy which behave according to each model type. Within each model type, information is needed about the distribution of firms according to various parameter values.

All of these basic models of individual firms' behavior can then be incorporated into an over-all computer model. This complete model can simulate the actions of each firm (or at least of a sufficiently large number of firms) and the interactions among firms which comprise the behavior of industry variables. While such an approach would not involve any of the traditional "pitfalls of aggregation," for the aggregation process would consist in a straightforward summation of the values of the variables pertaining to each individual firm, it would introduce several new "problems of disaggregation"; namely, problems of allocating sales among individual firms and of obtaining precise descriptions of individual firms' behavior.

Whenever any economic sector is analyzed into two or more groups of firms, the mechanisms by which sales are distributed among the separate groups must be specified. These relations may be of an entirely different character and considerably harder to establish than the decision-making processes followed by individual firms.

It is possible that factors which are either essentially random or else not explainable in terms of variables usually included in our models become relatively more important the further one disaggregates the economy. Should this be the case, we might at best be able to describe the detailed behavior of individual firms with only a low degree of reliability. If the specification errors in the models formulated for individual firms or infrasector groups of firms cancel out, on the average, then individually unreliable microeconomic models may yield reasonably accurate reproductions of sector behavior. Instead of canceling each other, however, these specification errors could cumulate through aggregation, leading to extremely unsatisfactory determinations of the values of sector variables.

If the relative distributions among firms of some crucial variables are unstable over time and if our microeconomic models succeed in reproducing these changing distributions, then a microeconomic approach to aggregate economic behavior would yield more accurate

⁴This approach to aggregate economic model-building would be hopelessly impractical without the use of electronic digital computers possessing high operating speeds and large memory capacities.

³ A good discussion of the possibility of representing superficially different kinds of entrepreneurial decision-making situations in terms of a small number of model types is found in A. Charnes and W. W. Cooper, "Management Models and Industrial Applications of Linear Programming," *Mgt. Sci.*, Oct., 1957, pp. 38-91.

forecasts of over-all economic variables than would a direct macro level model. For example, the effects on manufacturers' purchases of a given over-all level of manufacturers' inventories may very much depend upon how the stocks are distributed among manufacturers. Should this relative distribution vary greatly from month to month, than aggregate relations involving manufacturers' inventories may be fairly unreliable.

Some Unsolved Problems

To date, economists have only scratched the surface in exploring the potential of computer simulation as a tool of economic research. Economic simulation models at the level of individual firms have been reported by Cyert, Feigenbaum, and March, by Forrester, and by Hoggatt, although none of this work has tried realistically to simulate the behavior of actual firms. At an industry-wide level, simulation studies have been developed by Cohen,8 by Hoggatt and Balderston,9 and by Yance.10 At the national economy level, computer models have been formulated by Orcutt, Greenberger, and Rivlin, 11 by Duesenberry, Eckstein, and Fromm, 12 and by Holland. 13 Although those of us working in this area are extremely optimistic regarding the future which simulation techniques will play in developing economic theory, including the theory of the firm, this optimism is based not upon any solid accomplishments already achieved but rather upon some general programmatic considerations.

There are three broad classes of unsolved problems (empirical, methodological, and programming) which must be conquered before the great promise which simulation techniques hold to economists can be fulfilled.

To begin with, a great many empirical problems must be overcome.

Harvard Bus. Rev., July-Aug., 1958.

Harvard Bus. Rev., July-Aug., 1958.

Austin C. Hoggatt, Simulation of the Firm, Research Paper RC-16 (IBM Research Center, Poughkeepsie, N.Y., Aug. 15, 1957).

Kalman Joseph Cohen, Computer Models of the Shoe, Leather, Hide Sequence (Ph.D. thesis and Behavioral Theory of the Firm Working Paper No. 14, Grad. Sch. of Ind. Admin., Carnegie Inst. of Tech., May, 1959, to be published by Prentice-Hall in 1960).

Austin C. Hoggatt and Frederick E. Balderston, "Models for the Simulation of an Intermediate Market," presented to the Econometric Soc., Chicago, Ill., Dec. 29, 1958.

Joseph V. Yance, "Simulation of a Model of Production and Prices," presented to the Econometric Soc., Cambridge, Mass., Aug. 26, 1958.

Guy H. Orcutt, Martin Greenberger, and Alice M. Rivlin, "Decision-Unit Models and Simulation of the United States Economy" (mimeographed, Harvard Univ., Jan., 1958).

James S. Duesenberry, Otto Eckstein, and Gary Fromm, "A Simulation of the United States Economy in Recession," presented to the Econometric Soc., Chicago, Ill., Dec. 28, 1958.

¹³ Edward P. Holland, "Progress Report, June 1959 on The Computer Study of Economic Takeoff Problems" (Center for Int. Studies, Massachusetts Inst. of Tech.).

⁵ R. M. Cyert, E. A. Feigenbaum, and J. G. March, "Models in a Behavioral Theory of the Firm," Behavioral Sci., Apr., 1959.

^a Jay W. Forrester, "Industrial Dynamics—A Major Breakthrough for Decision Makers,"

In order to take full advantage of computer simulation techniques, it is necessary to obtain a body of empirical information far more detailed than that with which economists usually have dealt. Computer models can provide a useful framework around which the collection and organization of empirical information can be arranged. Data collection is a particularly serious issue for computer simulation models which center on the behavior of individual firms and households, since these frequently focus on the processes whereby information is acquired and decisions are made. To formulate and test such models, it may be necessary to gain direct access to the internal records and operations of firms.

There are important unsolved methodological problems which arise in work with computer models; namely, how should functional forms be specified, how should parameters be estimated, and how should simulation models be validated.

Determining reasonable ways of specifying functional forms in computer models is necessary when the theory on which the model is based leads only to hypotheses stating that specific variables are causally determined by particular other variables, without delineating the exact form of the dependence. Our economic theories often are of this type. This problem is less important for traditional mathematical models, because such models are frequently restricted to linear equations to facilitate analytical solutions. There is no reason why computer models should be similarly limited, however, since no attempt is made to solve them analytically. Indeed, the great power of simulation techniques is their ability to handle complex, nonlinear relations. Allowing a function to be nonlinear opens up the possibility that it could have any one of a large number of possible forms. Some efficient procedures must be found for determining the proper forms of functions in these situations.

Once all functional forms in a model are specified, several parameters which have not been assigned numerical values usually remain. This assignment must be made before the model can be simulated. The values of the parameters should be estimated to secure the best fit between the model and the world it is intended to describe. A simulation model which purports to portray evolutionary behavior over many successive time periods involves a very high order of joint determination of all the endogenous variables, stretching over the entire time span which is simulated. Relatively recent advances in econometric methodology indicate that unbiased and efficient parameter estimates can be obtained only when explicit account is taken of the simultaneous character of the equations in the model. Should these results carry over into simulation models, obtaining maximum likelihood estimates of all

the parameters of such models may be an extremely formidable task.

The likelihood of a computer simulation model incorrectly describing the world is very high, because it makes some strong assertions about the nature of the world. There are various degrees by which any model can fail to describe the world, however, so it is meaningful to say that some models are more adequate descriptions of the world than are others. Some criteria must be devised to indicate when the time paths generated by a computer simulation model agree sufficiently with the actually observed time paths so that this agreement cannot be attributed to mere coincidence. Tests must be devised for the goodness of fit of such models with the real world. The problem of model validation becomes even more difficult if available data about the "actual" behavior of the world are themselves subject to error.

The final problem limiting further work with computer models is the need to develop more suitable programming languages. Our ability to work flexibly and rapidly with computer models is currently hampered by the state of the programming art. Once a computer model has been fully specified in flow chart form, the task of programming and running the model should be almost automatic. Some of the various algebraic compilers now available for digital computers are reasonably suitable, but they can be considerably improved to facilitate work with computer models.

Conclusion

The ultimate test regarding whether computer simulation techniques have any significant contribution to make to the theory of the firm is still far in the future. However, a growing number of economists have faith that this new methodology does offer great promise for exploring the causal mechanisms which govern the behavior of individual firms. To achieve satisfactory answers to such questions as how are resources allocated within firms, what are the effects of organizational structure on entrepreneurial behavior, and how are price and output decisions made in oligopoly market situations, we need to develop theories of the firm which incorporate a much greater degree of realism and complexity than does the traditional neoclassical theory. Computer models seem to be especially well suited to handle the types of complexity which are inherent in such theories.

THEORY OF AN EFFICIENT SEVERAL-PERSON FIRM*

By JACOB MARSCHAK Yale University

The firm of the classical theory is managed by a single person, the entrepreneur; he has complete knowledge of his present and future environment and is efficient in the special sense that he chooses plans maximizing his profit. More recent studies deal with a firm that is led by one or more persons. Each of them decides on the basis of partial information; and the decision may or may not be efficient.

Efficiency. In one respect, my exposition will not be quite so general. For I shall confine myself to the efficient firm, although in a broader sense. The firm will be assumed to have a consistent order of preferences. Its goal need not be maximum profit.

Our Chairman today, Richard Cyert, is one of those who have searched for significant theorems about inefficient behavior of firms. I submit that the analysis of efficient business firms, while less general and less closely portraying reality, is also useful, for two reasons: (1) It may well be that, on the whole, the efficiency assumption is not a bad approximation, especially for organizations that have survived over a long time; they have behaved as if they had pursued the goal of maximizing the chance of survival (not the profit); (2) we are often asked, not to describe how badly business people have solved their problems in the past, but to solve a business problem, as best we can; to act like engineers, not to engage in comparative zoology.

Subjective Probabilities and Utilities. Strictly speaking, the manager of A. Marshall's theory, if he did not know the environment with certainty, knew the probability distribution characterizing it; and he computed and maximized the actuarial value (the mathematical expectation) of profit accordingly. When Frank Knight showed that relevant future events are, in the main, not repetitive, it was concluded that the theory of probability is of no interest to the theory of the firm. This made the analysis of decisions somewhat inarticulate. Yet in recent years the practical needs of business and military decision-makers made it necessary to take a second look. Modern statisticians, asked to advise on action without being able to collect large samples, have approached the problem in the economist's spirit, as one of efficient

^{*}Prepared under a contract of the Office of Naval Research, Task NR 047-006, with the Cowles Foundation for Research in Economics at Yale University. The main contents of this expository paper resulted from the author's long collaboration with Roy Radner.

behavior. Somewhat simplifying, we can say that the "personalistic" view of L. J. Savage and others has revived the concepts and behavior postulates made in the eighteenth century by Thomas Bayes, a founder of the theory of probability; thus: (1) if, for whatever reason, you bet 9 guineas against 1 on one of two alternative events, you behave as if you were assigning at least .9 probability to one of them, and were choosing that action (viz., to bet rather than not to bet) which maximizes the actuarial value of your gain; (2) if the trials are repeated, you will achieve maximum actuarial gain by raising, after each trial, the odds in favor of that event which has just occurred.

The definition of (subjective) probabilities given in the first clause reminds the economist of the definition of the consumer's subjective utilities: if, and only if, the decision-maker is consistent do those numbers, or ranks, exist; i.e., can be ascertained from his behavior. And because of the second clause, the subjective probabilities will approach the relative frequencies, and hence approach the objective probabilities, as repetitions become more numerous. Knight's risk—the case when probabilities are known to the decision-maker—is thus a limiting case.

The main step beyond Bayes made by modern thinkers (beginning with F. P. Ramsey) consists in replacing money by utility. This brings us, in fact, back to Marshall's view of gambling, but with probabilities reinterpreted subjectively. If business is gambling (as Mr. Baruch asserted against squeamish J. P. Morgan), it is less like roulette than like betting on horses.

The efficient man, then, behaves as if there existed two sets of numbers called, respectively, utilities (attached to the states of the decision-maker) and probabilities (attached to the states of the environment), whose sum of products (the expected utility) he maximizes. This takes care of the manager who is cautious in the sense that he assigns an almost infinite negative utility to bankruptcy; or a manager who merely aspires to survive, or to achieve some other "level of aspiration" or who is interested, not only in profits, but also in power or status. No tautology is involved, since consistency may be contradicted by facts.

By incorporating subjective probabilities, economic theory of choice becomes a theory, not only of consistent tastes, but also of consistent beliefs. On this basis, a large number of business problems have been submitted to analysis: inventory control, production planning, portfolio selection, quality control. Let me point out some important concepts and relations fundamental to these studies and to the theory of the several-person firm, and not so clearly perceived in older theory.

Pay-off Function. The action of the decision-maker, given the environment, determines his future state. Therefore, depending on the particu-

lar criterion applied—profit, sales, status, survival, or power, or any combination of these—action and environment jointly determine the utility, or pay-off. The table showing the pay-off for each action in each environment is called pay-off function. If, for example, a competitive firm is judged by the simple criterion of profits, the pay-off function coincides with the classical profit function, which essentially reflects production technology and market conditions. The actions are, in this case, the inputs of raw materials, labor, etc.; and the product and input prices constitute the environment.

Decision Rule. Under uncertainty, the firm has to determine not an optimal action but an optimal decision rule. The rule tells how to adjust action to information. To be sure, in the extreme case of uncertainty, when the man cannot learn anything beyond the probability distribution he believes in, he can do no better than fix some optimal routine —a constant action that maximizes expected pay-off. For example, the expected profit of a firm may be maximized by fixing output so that, on the average, marginal revenue and cost are equal, the actual prices being unknown. In general, uncertainty is not that extreme. The firm can adjust its action to varying information even though information is not a complete or precise statement about the environment (but may merely help to estimate it). An optimal decision rule calls for an action that maximizes the expected conditional pay-off, given the information; for then the absolute (nonconditional) expected pay-off will be, in the long run, higher than if information were ignored. In the previous example, the optimal decision rule would become: given the information, choose an input level at which the conditionally expected marginal cost and revenue are equated.

A particularly important case of partial information was pointed out by Albert Hart, the economist. In general, the firm's profit depends upon a time-sequence of actions; but the firm's best plan is not a time-sequence of actions but, more flexibly, a time-sequence of decision rules, each making the action at a given future time depend on the partial information that will be available at that time. In the theory of games a sequence of decision rules is called "strategy" (as distinct from a single action or move). In statistics it is called "sequential decision function." Its name in the current literature on operations research is "dynamic program." For brevity we shall use the term "decision rule" (in singular) to denote the whole sequence of such rules.

Information Cost. Information is not costless. A firm which, not contented with a rough idea of averages, bases its decision on a very close continual study of various markets, has to pay for it. The closer the information to the true state of the environment, the better will be the best action chosen, in the sense of a higher expected utility of the

outcome. That this gain may be offset by the cost of gathering information was first emphasized in statistical decision theory: large samples are expensive. Similarly all research activities of a firm, and also its internal communications, are costly, because they claim the manager's limited time or because a delayed decision may be ill-suited to a changed environment.

Information Rule. We shall call an "information rule" the schedule that tells, for each state of the environment, what the firm will know about it. Suppose the relevant aspect of the environment is the set of prices of all raw materials and products of the firm and its competitors. Under one information rule, the firm might learn all these prices daily, to the nearest half-cent. Under another information rule, the firm might learn some of these prices weekly, others monthly and with less precision, and still others not at all. The former information rule may contribute more to the expected profit but will also presumably cost more.

Decision Cost. Cost is also attached to each decision rule. The processing of information into decision may be a difficult mental task; it is the more costly the larger its claims on the available capacity of the manager, and the larger the loss resulting from delay.

Organizational Form. We shall define organizational form as a pair of two rules: the decision rule and the information rule. A schedule showing the cost of each organizational form may be called the "organizational cost function."

If information and decision were costless, the efficient firm's problem would be to find a decision rule that bases action on all available information and maximizes expected utility. Since information and decision are not costless, the problem consists in finding simultaneously the decision rule and the information rule—i.e., in finding the organizational form—that will maximize expected utility net of organizational cost.

The solution of the problem—the optimal organizational form—will depend on the given circumstances. And what are these givens of the problem? They are, of course: the pay-off function; the probability distribution of the states of the environment; and the organizational cost function. For remember that each information rule translates environment into (usually partial) information, and each decision rule translates information into action. Hence each organizational form translates environment into action. But the action and the environment determine jointly the achieved utility, in a manner described by the pay-off function. Now, if information and decision were costless, the

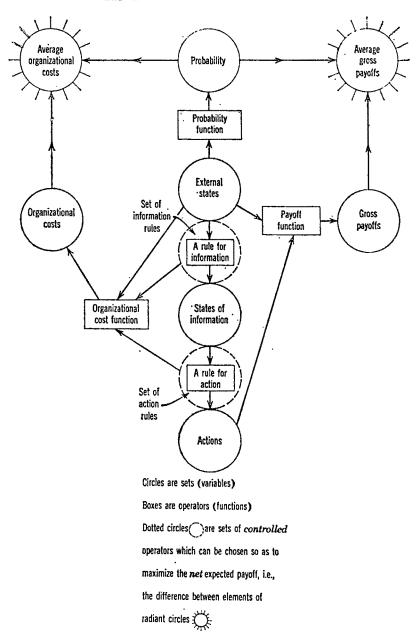


Figure 1

Determination of Average Gross Pay-off and Average Oranizational Costs

1

utility achieved in a given environment would depend on the pay-off function and the organizational form. Therefore the expectation of utility, i.e., its average taken over all possible states of the environment would depend on (1) their probabilities, (2) the pay-off function, and (3) the organizational form. The net expected utility depends, in addition, on (4) the organizational cost function. This cost function, the pay-off function, and the probability distribution are not under the firm's control. Given these three out of the four factors determining the net expected pay-off, the firm can choose the fourth—the organizational form—so as to maximize the net expected pay-off. (See Figure 1.1)

Illustrations. To illustrate the effect of the probability distribution on the optimal organizational form, suppose an external variable is subject only to small variations; then it may not pay to get information about them and to adjust one's actions to this information. Or suppose two variables are strongly correlated; then it may suffice to get information about one of them.

To illustrate the effect of the pay-off function, suppose that two purchased inputs are mutually strong complements or close substitutes; i.e., the marginal pay-off due to one of them strongly depends on the amount of the other. Then the firm benefits from knowing the variations in the prices of both; it will increase one input not only whenever the price of that input falls but also whenever the price of its complement falls (or that of its substitute rises).

To illustrate the effect of organizational cost: If it is large, the firm may prefer to pursue routine policy (mentioned by me earlier), and not to be kept informed about the variations of any of the external variables. It is because of high decision cost that a retailer uses a mechanical markup rule. It is because of high information cost that he does not spy on his competitors more extensively, and judges the market on the basis of his sales only.

Several-Person Firm. How is the problem modified if the firm consists of several—say, n—decision-makers (executives)? Each of them decides about different things and on the basis of different information. Our concept of organizational form has to be generalized. There are now n information rules, each translating true environment into some different, partial information, available to a different executive; and n decision rules, each translating the information of a given executive into his action. The set of n information rules—who learns what?—is generated by a communication network and the rules of operating it: Who talks to whom and when? Again, decision and information cost

¹Taken from the author's "Efficient and Viable Organizational Forms," Modern Organization Theory, ed., Mason Haire (Wiley, 1959), pp. 307-20.

will mainly consist of claims on the executives' time and of losses due to delayed decisions. It is mostly a fixed cost inasmuch as these persons are usually on long-term contracts.

To choose a good network of communication and good rules of operating it may require difficult analysis in any particular case. Economic theory never does more than establish some general results. Even these are, so far, fragmentary rather than systematic.

Suppose an outsider wants to organize or reorganize a firm according to his own criteria and beliefs. How will his choice of organizational form depend on his views of the pay-off function, the probability distribution, and the schedule of organizational costs? How do these factors affect the need for more or less communication between executives?

Properties of Pay-off Function: Complementarity. The allotted roles of two executives may be such that, with communication, they can increase each other's effectiveness; without communication, they may step on each other's toes. At first sight, there seems to be more complementarity, and hence more need for communication, when the different operations must be performed in succession—e.g., along a conveyor or at successive stops of an airline (studied by M. Beckmann)—than in the case of "parallel coupling" as among branch managers of a hotel chain. However, simultaneous operations may also imply high complementarity, if the branches have to compete for a limited capacity of some central facility, as with the salesmen of a bakery (studied by C. B. McGuire). Finally, a special case (emphasized in the theory of non-constant-sum games) occurs when the pay-off function has several maxima; e.g., two or more timetables are often equally good, but some "co-ordinator" has to choose one.

Person-by-Person Maximization. In the case of some pay-off functions, the maximizing decision rules can be found by step-wise approximations, person by person. This is true of the smooth pay-off functions beloved of classical economic theory: the summit of a smooth hill can be reached step-wise by moving due north and stopping at the highest point on that route; moving due east from there, and finding the highest point on that route; moving north from there, etc. Yet the hill representing the pay-off function may have a "ridge," as when, e.g., the sales of a nonstorable product are proportional to production or to demand, whichever is smaller; alternate adjustments by the manager of production and that of promotion will lead to one of the many points where production equals demand, but this need not be the highest one.

Properties of the Probability Distribution. We have already mentioned, for the single-person case, the effect of variances and of corre-

lations. The extension is obvious. As another example, suppose that the branch manager of a bank has power to decide on his own, except in emergencies; e.g., he can grant a loan only below a certain limit. Clearly, the optimal limit will depend both on the relative cost of the central and local officers' time and on the probabilities of applications for loans of various amounts.

Incentives and Leadership. So far, we discussed the goodness of alternative organizational forms chosen on the basis of the goals and beliefs of some outsider: an "organizer," a management consultant. The goals and the beliefs of the several executives themselves will, in general, differ. E.g., the goal of the owner-manager is not that of his officers. Goal divergence is diminished by appropriate incentives—positive such as a bonus or negative such as the threat of dismissal. A decision rule takes the form: Upon receiving information, proceed so as to maximize the actuarial value of utility to yourself, using as much additional information as you possess or can gather on your own. But even a complete identification of goals would not make beliefs identical. And an action optimal when the actuarial values are computed on the basis of one set of probabilities is not optimal under another such set. A leader is that member of the organization who imposes his goals and beliefs on the choice of the organizational form; he does so by setting incentives and thus controlling the actions of other members.

No theory is possible when concepts are vague. Yet an economist who takes seriously the multipersonal nature of the modern firm has at his disposal only ill-defined traditional concepts such as leadership, power, authority, co-operation, centralization. He is used to clearer ones; like "complementarity between factors of production." The present paper attempts to point a way to the necessary clarification.

MANAGERIAL ECONOMICS AND THE FIRM*

By Thomson M. Whitin Massachusetts Institute of Technology

Most economists are "relatively uninterested in descriptive microeconomics—understanding the behavior of individual economic agents -except as this is necessary to provide a foundation for macroeconomics..."

In order to obtain an elegant general theory, it is typically necessary for the economist to make strong assumptions concerning equilibrium, rationality, and perfect competition. While these assumptions may be necessary for the construction of general theories of industry, national, or international economics, it is nevertheless true that they are far from realistic. Many economists are not concerned with the dissimilarity between the theory of the firm and actual business behavior. Indeed the "classical economic theory of markets with perfect competition and rational agents is deductive theory that requires almost no contact with empirical data once its assumptions are accepted."2 Nevertheless, it is very often the case that unrealistic assumptions about the behavior of individual economic agents constitute an important cause of inadequacies in macroeconomic theory.

Recent literature in the area of operations research and management science cites many examples where considerable cost savings have been effected by the application of new techniques. This raises important issues concerning the assumptions underlying cost curves in the theory of the firm. The entrepreneur of classical theory achieves cost minimization by selecting optimal factor combinations; namely, those which equate the marginal physical product to cost ratios for the various input factors. The emphasis on factor proportions per se has led to the almost total neglect of other considerations which may well be of equal importance from the standpoint of cost minimization. Among these are production scheduling and sequencing problems which are implicitly in the analysis only to the extent that it is assumed that the entrepreneur minimizes costs and hence in some obscure way has solved these problems.3 Another aspect that is typically omitted from

^{*}Research supported by the Sloan Research Fund of the School of Industrial Management at M.I.T.

1 H. A. Simon, "Theories of Decision-Making in Economics," A. E. R., June, 1959, p. 254.

⁸ Sequencing problems will not be discussed in this paper. At the present time only the simplest sorts of sequencing problems have been solved.

economic models of the firm is the existence of seasonal variations in demand, which usually play a vital role in entrepreneurial decision making.

There is little evidence that entrepreneurs have solved these potentially important problems in a way that approximates cost minimizing conditions. Indeed, the simplest principles of economics are ignored so frequently in practice that it seems absurd to believe that extremely complicated problems have been solved. One can find examples where dollars to be received thirty years in the future are not discounted and other examples where totally irrelevant sunk costs play the dominant role in decision making even when many millions of dollars are involved. The errors introduced by such basic fallacies may affect costs and revenues by a factor of two or more.

Nevertheless, it remains fashionable for the economist to observe entrepreneurial behavior and attempt to find rationalizations of this behavior which are consistent with economic theories of rational behavior. If the behavior is far from rational, these attempts are obviously futile. It is necessary that the entrepreneur either possess a native intelligence which leads him to act in accordance with elementary economic principles or is educated to some extent concerning these principles before attempts to explain his actions in terms of theories of rational behavior have any chance of success.

Suggestions that the economist can influence businessmen's actions are not frequent in economic literature, while statements in opposition to such influence are commonplace. For example, Pigou has written that "it is not the business of an economist to try to teach woollen manufacturers how to make an sell wool, or brewers to make and sell beer, or any other businessmen how to do their job." Also, consider the statement that "the final aim of both cost theory and measurement is, of course, and could not be anything else but a better understanding of entrepreneur's behavior." Other statements indicate complete faith, unsupported by empirical evidence, that entrepreneurs are indeed in some way behaving in optimal fashion. For example, Milton Friedman suggested the following simple solution to the problem of what firms have minimum costs:

Surely the obvious answer is: firms of existing size. We can hardly expect to get better answers to this question than a host of firms, each of which has much more intimate knowledge about its activities than we as outside observers can have and each of which has a much stronger and immediate incentive to find the right answer. . . .

⁴ "Empty Economic Boxes: a Reply," Econ. J., 1922, pp. 458-65, reprinted in A.E.A. Readings in Price Theory (editors G. J. Stigler and K. E. Boulding), p. 137.

⁵ H. Staehle, "The Measurement of Statistical Cost Functions," A. E. R., 1942, pp. 321-33, reprinted in A.E.A. Readings in Price Theory, p. 275.

⁶ "Comment on Economies of Scale," in Business Concentration and Price Policy (Prince-

ton, 1955), p. 237.

There would be little room for managerial economics if such an attitude were universally accepted. When observing irrational acts, the economist could do little other than wonder what devious and subtle motives lead the entrepreneur to act in a seemingly foolish manner, for he is assumed to be acting wisely.

In this paper a positive approach is recommended; namely, that economists can influence businessmen to utilize economic models, thus obtaining firsthand knowledge of the decision-making process. There are areas where the economist can construct and implement fairly simple models, which, although falling far short of a general theory of business behavior, lead to considerable improvement in business practice as well as extending the static framework of the theory of the firm. There is much to be gained from the study of nonequilibrium models, since the equilibrium assumption is "certainly one of the major elements in his thought pattern which prevents an academic economist from understanding what is happening in business life." For example, much neglected cyclical and seasonal factors may be incorporated in the disequilibrium models. The remainder of the paper will consider economic models of particular problems of the firm as well as some examples of extending conventional economic theory to include additional elements of the real world.

As a simple example of an applied economic model, the economic lot-size model is selected. The entrepreneur selects a purchase quantity that minimizes the costs involved in purchasing and carrying inventories, or, in manufacturing, selects a production quantity that minimizes the sum of setup costs and inventory carrying charges. The price is determined by considerations outside the model and the quantity sold at this price is known and essentially of a nonseasonal character. Although these particular cost elements of this model typically receive no explicit consideration in economic models of the firm, it is a simple matter to relate them to conventional theory.

Consider a three-dimensional graph, with output per "year" measured on the x-axis, dollars on the vertical (z) axis, and the length of time (as a fraction of a "year") between setups and production or the placing of orders on the t-axis. Examination of a cross-section in zt plane (i.e., holding output constant) will reveal a U-shaped average cost curve. When the time interval is extremely short, production will take place often or many orders will be placed, leading to high average costs. For each different level of the yearly amount demanded there is a different U-shaped curve in the zt plane.

It is very important to note that the higher the carrying costs per unit per year, given setup costs, the smaller will be the optimal inventory level and consequently the more often production or order placing occurs; similarly, the higher the cost of a setup, given carrying costs, the larger the inventories and consequently the less often production or ordering takes place.

Wagner), pp. 301-02.

⁷P. W. S. Andrews, "Industrial Analysis in Economics," in Oxford Studies in the Price Mechanism (editors, P. W. S. Andrews and T. Wilson) (Oxford, 1951), p. 172.

⁸T. M. Whitin, Theory of Inventory Management (2nd ed.), App. 6 (coauthor H. M.

The minima of each of these average cost curves for given x can be projected onto the xz plane. The locus of these minimum points represents average cost as a function of yearly output, after optimization with respect to the time a lot will last. This average cost curve will be negatively sloped throughout, as economies of scale result from the spreading of setup costs over an increased number of units.

In practice, the entrepreneur considers only a cross-section in the zt plane, selecting the minimum of the U-shaped cost curve. The economist can influence entrepreneurs to utilize this type of model when the assumptions underlying it are valid. Indeed, he can contribute something to entrepreneurs already utilizing such models in several ways. The simple fact that only marginal costs should be included in the optimization formula is often ignored. In addition, the economist can show how the demand function can be incorporated in the model. the result being a useful blending of the demand function (typically not considered explicitly in the businessmen's formulation) and particular types of cost typically ignored by the economist. The combining of the two gives economic theory a higher degree of relevance in the real world and helps effect improved decision making by providing a broader framework for the problem at hand.

The practical importance of seasonal variations was mentioned above. The lot-size model can be extended to apply to the case of a demand subject to seasonal variations. In the case of constant costs. a simple computational algorithm has been derived which minimizes the sum of ordering costs and carrying charges.9 When traditional cost functions and demand functions are given for each period, the problem can be solved by means of dynamic programming.10 However, the dvnamic programming method can also be given an explanation in terms of more conventional economic concepts. 11

Another type of model developed by economists¹² and utilized in industry is a model employing "linear decision rules" to minimize costs. Where costs may be approximated adequately by a quadratic function it is possible to minimize the sum of such costs as payroll costs, hiring and firing costs, overtime costs, and inventory costs. This model is not an equilibrium model and is oriented toward cost minimization rather than profit maximization. Interperiod variations in demand play a kev role in the model. Indeed, the problem would be so trivial under steady-state equilibrium conditions that it would not merit discussion. The model is an important contribution to the theory of the firm from the standpoint of greater realism.

⁹ H. M. Wagner and T. M. Whitin, "Dynamic Version of the Economic Lot Size Model,"

Mgt. Sci., Oct., 1958, pp. 89-96.

Richard Bellman, Dynamic Programming (Princeton, 1957).

Whitin, op. cit., App. 6 (coauthor H. M. Wagner), pp. 303-27.

C. C. Holt, F. Modigliani, and H. A. Simon, "A Linear Decision Rule for Production and Employment Scheduling," Mgt. Sci., Oct., 1955, pp. 1-30.

A model somewhat simpler than the above can be used for the purpose of minimizing the sum of production costs and inventory carrying charges in the face of a known, seasonal demand pattern.¹³ The model provides as good an approximation as is desired to any increasing marginal cost function at the expense of increased computational effort. Various output levels may be defined as separate "activities" over the relevant range and approximated by a constant marginal cost over this range. The problem is the simplest form of linear programming, since it can be expressed as a "transportation" type model.

Much of the above discussion has been concerned with the problem of incorporating interperiod demand variations in economic models. Contributions have been made toward similar extensions in other areas of economic research. Vernon Smith's recent work in capital theory is a notable example. The relevance of demand cycles to conventional theory is demonstrated by the following quotation:

It was shown that where production requirements followed a cyclical law the phenomenon of decreasing returns generates a form of overcapacity, wherein the optimal stock of capital under dynamic requirements exceeds optimal stock under corresponding static requirement.³⁴

Note that these findings differ substantially from those of E. A. G. Robinson:

Our argument thus far has led to the conclusion that the existence of risks and fluctuations leads in general to smaller units and in particular to smaller technical units than would be economical were production carried on continuously and evenly.¹⁵

Clearly, both authors support the thesis that interperiod variations in demand affect the choice of optimal factor combinations.

The quadratic cost model and the linear programming model presented earlier are typically utilized for multiproduct firms wherein units of capacity may be allocated to various different products. Eli W. Clemens constructed a theoretical model with this realistic feature in his "Price Discrimination and the Multiple-Product Firm," published in 1951 in the Review of Economic Studies. The Clemens model can be extended to cover the multiperiod cases as well. The price discrimination type of analysis plays both an interperiod and an intraperiod role. The marginal revenue and marginal cost curves of each period may be added horizontally to obtain the aggregate marginal revenue and aggregate marginal cost curves, respectively. The intersection of a horizontal line at the value indicated by the aggregate curves with the marginal cost curve of each period indicates the total

E. H. Bowman, "Production Scheduling by the Transportation Method," Operations Research, Feb., 1956, pp. 100-103.
 Vernon L. Smith, "The Theory of Investment and Production," Q. J. E., Feb., 1959,

p. 87.
E. A. G. Robinson, The Structure of Competitive Industry (London, 1950), p. 102.

level of output. The intersection of this same horizontal line with the marginal revenue curve of each product in each period determines the number of units to be sold in each period. In the event that a period's optimal production level exceeds its sales, a decision must be made concerning which good or goods are produced for stock. By and large, as long as total inventories are relatively small compared to sales, it is of little consequence which of several major items are selected for inventory. A type of problem arises in this model when there are "infeasibilities"; that is, when total sales exceeds production plus inventories. The following "partitioning" procedure has been developed for handling this problem:16

Suppose t' is the last period in which an infeasibility exists (i.e., a "negative inventory" Suppose t' is the last period in which an infeasibility exists (i.e., a "negative inventory" level); total production must consequently exceed total sales over periods t', t'+1, ..., n, since our construction assures us that total production over all n periods equals total sales. We try a new solution by partitioning the n periods into two groups, those before and including t', and those after t'. The standard procedure is applied to the former group of periods and the feasibility conditions are examined again. If feasibility is obtained, the aggregating technique is next applied to the latter group of periods, and provided feasibility also holds for this latter group, we have arrived at the optimal pattern over the n periods. If under the partitioning feasibility still does not exist in the first group of periods, this first group is itself partitioned as before. The process continues until finally a group of periods $1, 2, \ldots, t''$ admits a feasible solution. Then the suggested aggregating technique is applied to the group of remaining periods $t'' + 1, \ldots, n$; at this stage the partitioning procedure may also be necessary. procedure may also be necessary.

The partitioning procedure indicates a method for isolating certain sequences of periods which are independent of other periods. For example:17

If for any period t''' we find that no inventory is being carried to period t'''+1, we may conclude that if demand and/or production costs increase some in periods up to and including t''', or if demand and/or production costs decrease in periods after t''', there still will be no carry over of inventories from t''' to t'''+1, although, of course, sales and production patterns after within the group of periods where the changes occur; in other words, the true groups of periods where the changes occur; in other words, the two groups of periods are independent of each other for certain broad types of changes in demand and costs.

Many applications of economic analysis exist in addition to the few examples discussed in this paper. Applications of simple static marginal analysis exist,18 although, as stressed above, most practical problems involve multiperiod considerations due to seasonal or cylical demand variations. In most of the applications, the analysis is not oriented toward equilibrium theory, macroeconomic theory, or the theory of market structures. Nevertheless, a more realistic microeconomic theory is possibly of more relevance to macroeconomic theory than

¹⁶ H. M. Wagner and T. M. Whitin, "Dynamic Problems in the Theory of the Firm,"

Naval Res. Log. Q., Mar., 1958, pp. 59-60.

11 Loc. cit. See also F. Modigliani and F. E. Hohn, "Production Planning Over Time and the Nature of the Expectation and Planning Horizon," Econometrica, Jan., 1955, p. 65, for related results.

¹⁸ H. S. Karr and M. A. Geisler, "A Fruitful Application of Static Marginal Analysis," Mgt. Sci., July, 1956, pp. 313-26.

the more elegant equilibrium models. Recent work of F. Modigliani and K. J. Cohen make clear the relevance of a more realistic theory to macroeconomics. ¹⁹ Other examples are in the area of business cycle analysis, where it is difficult to evaluate the important effect of changes in inventory investment without knowledge concerning desired levels, ²⁰ which knowledge is dependent on extensions of the theory of the firm in the direction of greater realism and relevance.

¹⁹ "The Significance and Uses of Ex Ante Data" in Expectations, Uncertainty, and Business Behavior, ed., M. J. Bowman (New York, 1958), pp. 151-64.

²⁰ M. Abramovitz, The Role of Inventories in Business Cycles (New York, 1948).

GAME THEORY AS AN APPROACH TO THE FIRM

By Martin Shubik General Electric Company

Game theory is a new methodology designed specifically for application to the social sciences. There is little more justification in discussing "game theory as an approach to the firm" than there would be in discussing "the calculus as an approach to the firm."

With the growth of powerful modern methods it has become necessary to make a careful distinction between the methodological aspects of a subject and the substantive aspects. It is my belief that the study of economics is at the start of an era which can be characterized by the growth of two new approaches to economics. They are: (1) mathematical institutional economics and (2) mathematical experimental economics. Developments in mathematical economics have led to the diagramatics commonly used in most theory courses, later to applications of the calculus, and still later to uses of probability theory, linear programming, and game theory.

The last few years have seen empirical investigation go from mainly verbal institutional studies to modern statistical methods, sampling techniques, and survey design, and recently to the simulation of complex organizations. The new trends from both the mathematical and the empirical sides of the study of economics appear to be converging after many years of having drifted further apart.

The second subject noted—mathematical experimental economics—has begun to grow in the bordering areas between economics, psychology, and sociology, with experimentation taking place in the study of competitive gaming, small-group behavior, and in the study of utility theory.

It is my belief that the development of the methodology of game theory is playing an important role in the reconciliation of microeconomic theory with observational and experimental economics. This is being assisted further by the development of the experimental techniques of gaming and the empirical techniques of simulation.

Game theory is a relatively new subject. It came into being formally about fifteen years ago with the publication of the *Theory of Games and Economic Behavior*, by von Neumann and Morgenstern. There had been previous work by the two authors and by Borel.

Recently Harold Kuhn has noted that as early as 1713 the concept of a matrix game and its solution by means of mixed strategies exists in the correspondence between Montmart and Nicholas Bernouilli. The credit for the invention of the mixed strategy goes to the English mathematician Waldgrove.

Even today most economists associate the theory of games with the theory of solution for two-person-zero-sum games. This is due to a formal mathematical analogy that exists between the solution of such games and associated linear programs. Other than this formal mathematical relationship there is no connection between the problems and the approach of the theory of games and those of linear programming.

Before one is in a position to understand fully the relationship of game theory to the subject matter of microeconomics, it is necessary to distinguish among at least five different branches of the theory of games. They are: (1) The theory of solution for two-person-constant-sum games; (2) the description of the extensive form of a game; (3) twenty-odd theories of solution for an n-person game (where $n \ge 2$ for non-constant-sum games; $n \ge 3$ for constant-sum games); (4) several theories of solution for games against nature (games in which the rules are not completely specified); and (5) theories of solution for dynamic games.

The original book by von Neumann and Morgenstern deals with three of the above topics. It offers a complete theory for the playing of a two-person-constant-sum game. This amounts to a normative prescription for the behavior of a player in any situation which can be characterized by two matrices whose corresponding entries have a constant sum. There are very few situations in economics which have a structure that can be characterized by a constant-sum game. This theory does not appear to be relevant to economics.

The set theoretic description of the extensive form of a game has probably provided the most valuable contribution of game theory to date. This notation is not only relevant and useful for the study of the firm but has provided a valuable tool for the investigation of the anatomy of decision making in general. It has aided in the sharpening of concepts such as decision, choice, alternative, strategy, information, information set, rules of the game, and pay-off.

A clarification of these concepts is of considerable assistance in making the distinction between market structure and behavior of individuals within a structure. In the economic literature on oligopoly this distinction is often not clearly made. Much of the confusion in the study, for example, of price variation duopoly comes in the lack of detailed specification of information conditions and pay-off conditions. Lack of distinction between market structure and behavior is to be found in the works of Edgeworth, Mrs. Robinson, Stackelberg, and others who have dealt with reaction curve theories of oligopoly.

A theory of solution to a game is basically a formalization of the theorist's belief of how individuals actually behave or should behave when confronted with an environment, say, a market structure, as portrayed by the description of the rules of the game. A recommendation of a new solution concept must be justified either on normative or on empirical grounds. To date the presence of about twenty differing theories for the solution of an *n*-person game can be taken as an indication that there is neither great agreement on a normative prescription for behavior, nor is there much faith in the present ability of the profession to produce a single convincing theory of oligopolistic behavior based upon observation.

Specific applications of various theories of solutions for *n*-person games to economic problems have been made by Vickrey, Harsanyi, Luce, Raiffa, and others working on bargaining, by Nash, Shapley, Shubik, and others working on applications of theories of nonco-operative and co-operative solutions for *n*-person games.

A fourth area of work is that of games against nature. This is closely related to modern developments in statistics, as has been indicated by the advanced work of Blackwell and Girshick in their book, Theory of Games and Statistical Decisions. In spite of Ricardo's urging that "it would be no answer to me to say that men were ignorant of the best and cheapest mode of conducting their business and paying their debts, because that is a question of fact, not of science, and might be urged against almost every proposition in Political Economy," recent developments in economic theory and in psychological theory and experiment have attempted to deal specifically with decision making under conditions of uncertainty. A covering of the game theory approach to this area is to be found in the thirteenth chapter of Games and Decisions, by Luce and Raiffa, and in the eighth chapter of Strategy and Market Structure, by Shubik.

The type of game dealt with by von Neumann and Morgenstern has as its analogue the games of bridge, poker, or chess. These analogues are not totally suited to portraying some important features of the firm. All the above games are of finite duration with a single pay-off being made at the end of the play. Theoretically a corporation does not have a finite life. Furthermore, it receives pay-offs throughout the game. Sometimes it pays out its income in the form of dividends; sometimes it reinvests.

If an analogy between a game and the activities of a corporation is to be drawn, corporate activity might be viewed as a nonterminating poker game in which players occasionally die or are born and inherit a seat and furthermore in which there is an inflow of edible poker chips which provide the only source for food. Games of economic survival—closely related to the gambler's ruin problem studied in probability theory—provide a formalization for a dynamic model of the firm. A study of this type of game leads to a closer examination of concepts such as viability and flexibility and the meaning of threats. These are closely related to work in both the military and political science.

At the beginning of this paper reference was made to simulation and gaming. It was suggested that these techniques might have a role to play in conjunction with the development of the theory of games. This connection comes in the use of simulation to study the structure of complex organizations and in the use of gaming to study the behavior of individuals in competitive situations.

The description of a game—in other words, the complete specification of the rules of a game—is equivalent to the complete specification of the structure of a firm or of a market. The specification of a solution concept for a game is the equivalent of the specifying of a theory of behavior of individuals within a given structure.

Game theory per se is a methodology and does not provide us with new facts and observations concerning the structure of markets or the behavior of entrepreneurs. Economists are still in need of considerable work in the studying of both structure and behavior. It appears to me that the work of Hoggatt, Kalman Cohen, Balderston, Yance, Orcutt, and others on the simulation of complex economic organizations is providing an important contribution to the empirical study of economic structure.

The work of Siegel, Fouraker, David Stern, Hoggatt, Flood, Ratoosh, Feeney, Minas, and others is providing some important empirical insights into competitive economic behavior even if the experimental situations are so highly specialized that it would be dangerous to generalize from them at this time. The theories of the firm and of market structure will in all probability call for a much more taxonomic approach than present-day theorists would like to follow. They also appear to require a more general and abstract theoretical content than would be desired by an institutional economist. This requires the correct blending of mathematical, observational, and experimental work and it is in the first of these, but in conjunction with the other two, that the theory of games is making its contribution.

DISCUSSION

MICHAEL J. FARRELL: It may perhaps be useful to attempt to put all this novel research in perspective, to relate it to the traditional theory of the firm. The traditional theory may be characterized—and you must forgive me if I oversimplify—as a theory of profit maximization. If you choose a definition of profits, and specify the constraints the firm is subject to, it is generally easy to infer what policies will maximize profits. For this reason, the deductive part of the theory of the firm has usually been a trivial exercise in the calculus, and the live (or should I say lively?) controversies have concerned the assumptions of the theory.

For instance, even if one ignores those definitions of profits that would reduce the statement "the firm maximizes its profits" to a tautology, there are still a wide range of definitions available, and there has been a good deal of discussion as to which, if any, of these definitions would make the above statement a reasonable approximation to reality. Again, it is not always easy to determine what are the constraints to which the firm is subject—what, for instance, are the characteristics of the markets in which it sells its products; and there have been heated debates—sometimes empirical, sometimes purely a priori—as to the characteristics of particular markets.

Now, everyone here is well aware that the traditional theory has many inadequacies, and we shall soon consider some of them; but it must be recognized that it also has considerable achievements to its credit. It provides a remarkably satisfactory analysis of the behavior of firms in competitive industries (although here, as elsewhere in economics, the comparative statics is much more fully worked out than the dynamics) and so permits the extension of supply and demand analysis from the artificial pure exchange case to situations involving production. In so doing, one might argue, it provides the basis for perhaps the most satisfactory analytical tool the economist has yet produced. Nor is the restriction to competitive industries so restrictive as has been sometimes supposed, for it was the great achievement of P. W. S. Andrews to demonstrate that the theory of the perfectly competitive firm is extremely robust; that is to say, that it still provides a good approximation to reality even when substantial violations of its formal assumptions are permitted.

But the theory of perfect competition is not merely an invaluable part of positive economics, it is also important normatively; for it turns out that the "optimal conditions of production and exchange" are the same as the conditions for a competitive equilibrium. The optimality of these conditions is, of course, like the theory of perfect competition, subject to a number of conditions which are never exactly complied with in real life; but I think most economists would agree that they represent by far the most useful product of the vast literature of welfare economics.

It is against a background of these considerable achievements that, I feel,

the economist should view this novel and specialized research. But before we can appreciate the need for this new research, we must consider the limitations of the traditional theory; and before attempting to do this, I should like to look for a moment at the rationale of the basic assumption that businessmen maximize profits. There are, I think, two mutually reinforcing arguments for believing this in general to be true. First, common observation leads us to believe that many businessmen are in business to make money; and secondly, businesses that make money tend to prosper and grow, while businesses that lose money tend to decline and even disappear.

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We may call these the arguments of motive and of selection. The latter is, of course, directly analogous to the principle of natural selection in biology, and we know that in biology at least this can act with quite remarkable effectiveness in securing the predominance of a trait that favors survival. We shall discuss later whether the selection mechanism is always likely to be as effective in economics, but we must note that, whereas in biological situations the appearance of the favorable characteristic is dependent on chance (the so-called "mutation"), in economics we know, by our argument of motive, that there is always a large proportion of businessmen who are striving to maximize profits.

Thus motive and selection work together in leading businessmen to attempt to maximize profits. In addition, selection will tend to eliminate those who try but fail; that is, to make sure that businessmen not only try to maximize profits but also are fairly efficient in doing so. We have, I think, sketched a fairly strong a priori argument in favor of profit maximization theories, but we have made certain implicit assumptions which we must now examine.

Perhaps the key to these assumptions is the way in which we have used the terms firm, business, and businessman interchangeably. We have really been talking about small, one-man businesses, where the objectives of the firm are those of the businessman. It is in the case of small businesses in competitive industries that our arguments are cogent. We expect a priori that many small owner-managers will seek to maximize profits. We expect a priori—and have not a little empirical evidence—that the force of selection will be strong in a competitive industry with small firms. The market situation is relatively simple to determine, and the major decisions can be effectively co-ordinated by the owner-manager. Small wonder, then, that profit maximizing theories work well in competitive industries.

But whereas in the nineteenth century—when the theory of the competitive industry was developed—the greater part of economic activity could be fitted reasonably well into such a framework, this is by no means true in the twentieth century. The salient change is that firms are now very much larger and more complex. It is now by no means clear that the decisions in a firm are taken by people who attempt to maximize profits; the selective mechanism is probably relatively ineffective for large firms, which may grow more or less rapidly but seldom shrink, let alone vanish; the organization of the firm is so complex that the co-ordination of decisions is a major problem; and if the large size of firm leads to a situation of genuine oligopoly, the market structure poses extremely difficult questions.

It is as attempts to extend the theory of profit maximization to this twentieth century world that I suggest we view the current research. I want, however, to emphasize that when I say "extend" I do not mean that we should seek rationalizations or redefinitions to prove that all firms maximize their profits. I mean that the questions we should ask—in assessing the implications of this new research or even planning it—are not general questions of the form of how will firms behave if . . . , but rather questions like, under what circumstances will firms' behavior differ from that predicated by profit maximization theories, or, will these deviations be systematic and if so in what direction, or even, will these deviations be against the social interest and, if so, what can we do to prevent them?

For example, in a large modern firm we can no longer speak about the objectives of the firm as though they were simply the objectives of a single owner-manager. We must recognize, at the least, that the interests of salaried officials differ from those of shareholders (even if the officials also hold shares) and that the firm's policy generally represents some balancing of these interests. One of the major tasks before us is to determine—whether by a formal theory of coalitions, such as Professor Marschak has suggested, or by an equivalent but less formal analysis—just how these conflicting interests will deflect the firm's policy from pure profit maximization. If, when we have done this, it seems (to us or to society) that these deviations are against the social interest, we should then go on to consider whether it would be possible, by suitable institutional changes, to reduce or prevent them. We might think of this, formally, as converting the "coalition" into a "team"; or, more concretely, as tightening shareholder control or relating the remuneration of officials more directly to profits, or something of this kind.

In a large and complex firm it is, of course, very much easier to make mistakes; and if, as we believe, the selective mechanism is relatively weak, it becomes quite likely that, even when firms are trying to maximize their profits, their attempts are quite inefficient. It is here that we must consider Professor Whitin's arguments for the importance of managerial economics. I think we would all agree that the provision of technical assistance, together with training in solving complex or subtle problems, should increase the businessman's efficiency. We must certainly agree that the more the economist comes to grips with the detailed, technical problems of the real world, the more likely are his theories to be relevant to that world. But there is one point at which I would enter a caveat.

Professor Whitin has argued eloquently against the assumption that the businessman is always right; we are, I think, all convinced that the businessman is fallible and can often learn from the economist. Now I am sure Professor Whitin would agree that the economist is also fallible and can often learn from the businessman. But this is a point he failed to emphasize in his paper, and in so doing he failed to warn us against one of the major pitfalls of managerial economics. Consider a conference between a businessman and a managerial economist. The former, steeped in the complexity of his problems, is yet rather inarticulate, particularly when faced with a battery of theoretical concepts. The latter, by contrast, is eloquent and persuasive, with the theo-

retical concepts at his finger tips—but has a relatively slight knowledge of the relevant facts and is perhaps inclined to take a rather simple view of the businessman's problems. It seems all too likely that the businessman may be talked into a policy based on a theoretically sound analysis of a situation importantly different from the one he is in fact in.

If this happens at all frequently, we shall be increasing the predictive accuracy of our theories by talking the businessman into making the same mistakes that we ourselves make. This possibility can, of course, be minimized if managerial economists approach their mission in a sufficiently humble frame of mind and always remember that the chances are that they can learn at least as much from the businessman as he from them.

Perhaps the most important problem raised by complexity is that of organization. We know that even the one-man decision-maker will usually, if confronted with a series of sufficiently complex decisions, adopt some method of organizing his analysis and the consequent decisions. This method may consist in rules of thumb, or merely in a subconscious routine that tends to be followed. But some organization he will almost certainly adopt, given sufficiently complicated and repeated problems. One can see at once how much more important this organization becomes when the decisions are to be made by several (let alone many) people.

This problem is not, of course, independent of the two we have just discussed—organization is doubly difficult in the presence of conflicts of interest or intrinsically difficult problems—but it is very much a problem in its own right, and one which raises very general issues. For whereas with the one-man decision-maker it is reasonable to assume (as we have done implicitly) that a firm's desire to maximize profits—and its efficiency in doing so—are characteristics independent of environment, one can make no such assumption where a formal organization is present. On the contrary, firms can feel well satisfied if their organization functions more or less perfectly in the situations in which they frequently find (or expect to find) themselves.

This means that firms' behavior may well deviate systemically from profit maximizing in situations which are rare or unexpected; and that there may also be frequent systematic deviations where the reduction in profits is so small that the more elaborate organization needed to avoid it cannot be justified. These small or infrequent deviations may be unimportant to the firm and yet important to society: to determine when they will occur is therefore an important problem for economists. Even more important is the determination of deviations in the face of the unexpected and, more generally, the analysis of how rapidly firms can adapt their organizations to the demands of a new environment. (The biological analogy is clear.)

To do this we must abandon our beautifully simple profit maximizing theories and develop an organizational theory of the firm. (I do not, of course, mean that we should assume that businessmen do not try to maximize profits, but merely that we now have to analyze the methods they adopt.) This may be done either by developing theories as to the optimal organizational structure for a firm in a given environment—by means of Professor Marschak's theory of teams, for example, or of decision theory—or by empirical analysis

as developed by Professor Cohen and by our Chairman, Professor Cyert. The full-cost principle is indeed one obvious example of "organization" in the broad sense in which we are using the word, and Professor Margolis' exposition illustrates how complex and subtle an organizational analysis must be. This, then, is one of the most important problems in the theory of the firm—perhaps in the whole of economics—and it is reassuring to find so much and such thorough research being done on it.

The final problem is that of market structure—in a nutshell, "the oligopoly problem." Here I can find little to add to Dr. Shubik's very full account, save perhaps to point out that experimental work on the oligopoly problem can be done—and is being done—without any direct relationship to game theory. I refer here to the now popular business games, which are perhaps in danger of falling between the pedagogic and the experimental stools but which could provide very useful empirical information.

I think, too, that most traditional economists are a little disappointed that game theorists have not yet produced a definitive solution of the bargaining problem—for my own part, I am beginning to doubt if one exists—but so much thorough and penetrating research cannot fail to add to our understanding of the problem.

RESEARCH ON INCOME, CONSUMPTION, AND SAVINGS

TESTS OF SOME BASIC PROPOSITIONS IN THE THEORY OF CONSUMPTION*

By Arnold Zellner University of Washington

A basic proposition in Professor Friedman's theory of consumer behavior [2] is that the ratio of permanent consumption to permanent income is independent of the level of permanent income. Given the validity of this proposition, Professor Friedman deduced tentative general propositions of great significance for economic policy and theory, particularly with respect to underdeveloped economies; namely, that "a low level of income does not make for a low savings ratio" [2, page 234] and that "the reduction of the inequality of permanent income status, whatever its importance in other connections, is neutral with respect to the savings ratio." [2, page 235] These latter propositions, of course, follow logically from the proposition that the "permanent" average propensity to consume is independent of the level of permanent income. Thus, if this "independence proposition" is open to question on theoretical grounds, as some [3, 7] have already suggested, then at least the logical and possibly the empirical validity of the latter two propositions is destroyed.

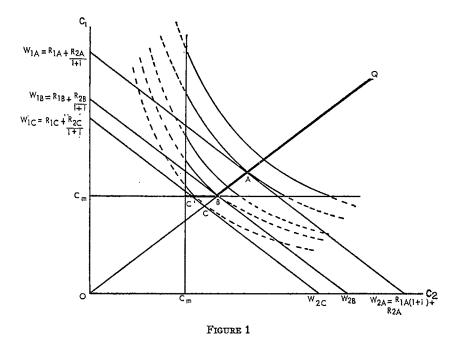
It is proposed herein to point out in connection with the theoretical argument advanced in support of the independence proposition that the existence of a physiologically and/or socially determined minimal or subsistence level of consumption is sufficient alone to contradict the independence proposition in theory. Then some empirical data bearing on the general theoretical issue will be considered.

A rough-and-ready critical theoretical argument may be formulated as follows. Suppose that at a permanent income level of \$10,000 per annum the permanent average propensity to consume is equal to 0.9. This propensity might also be equal to 0.9 at a permanent income level of \$5,000. But what about its value at permanent income levels equal to \$1,000 or \$500 or \$250 or \$50 or \$25? Clearly at lower and lower permanent income levels, a level must finally be reached which is just sufficient to provide a minimal consumption level with nothing remaining for saving. On these a priori grounds the permanent consumptionincome ratio would be expected to rise from its assumed value 0.9 to an

^{*} I wish to thank R. B. Bristol for reading and commenting on the initial draft of this paper.

upper limit of 1.0 as permanent income declines which implies that the independence proposition is suspect.

A more sophisticated theoretical argument leading to a similar result is based on the well-known Fisherian indifference curve construct, employed by Friedman [2, page 8], which is shown in Figure 1. Period one's consumption, C_1 , is plotted on the ordinate while period two's consumption, C_2 , is plotted on the abscissa. The indifference curves have been drawn to comply with the restriction that the utility function be linearly homogeneous—a restriction about which the author has reservations



but which is employed for present purposes since it does not affect the present argument and is critical in Friedman's theory. Introduction of a minimal or subsistence level of consumption, C_m , fundamentally alters the nature of the indifference curve system. The dashed portions of the curves are really not part of the indifference map since each point on the dashed lines has associated with it one period's consumption being below the minimal or subsistence level. Clearly the consumer is not indifferent between such a combination and another on the same curve which involves both periods' consumption being above subsistence.

Three budget lines corresponding to three levels of wealth are shown in Figure 1, where R_1 is receipts in period one, R_2 receipts in period two, i the interest rate, W_1 wealth in year one, and W_2 wealth in year two. The points of tangency A and B represent utility maximizing combina-

tions of consumption in the two periods consistent with the budget constraint. It will be noted that these points fall on a straight line which passes through the origin, a result which follows from the homogeneity assumption and thus are such that the ratio of utility maximizing consumption in period one to wealth (or permanent income) in period one is the same at A as at B (and at every other point on OQ).

Now consider point C. True, the budget line is tangent to an extension of an indifference curve at point C; however, moving to the point of tangency C would involve the consumer's consuming at a level below subsistence in period one, certainly not a utility maximizing position. The rational consumer will not choose this combination; rather he will choose the combination represented by the point C', the utility maximizing position for this level of wealth. Since C' lies above the ray OQ, the ratio of utility maximizing consumption in period one to wealth (or permanent income) in period one will be higher at point C' than at any point on the ray OQ. In fact as wealth drops below W_{1B} , this ratio will rise. The dark solid line in the figure is the locus of utility maximizing combinations of consumption given changes in period one's wealth, a constant interest rate, and an unchanging minimal consumption level.

Thus, according to the theoretical argument presented above, the permanent consumption-income ratio will change with the level of permanent income. This supports the interpretation of empirically observed Engel curves of consumption and saving put forward by Klein and Liviatan [4, pages 158–59] and others; namely, that there is a basic nonlinearity present which cannot be removed merely by taking income variability into account. Further, it is interesting to note that the present analysis leads to the conclusion that at low levels of permanent income consumption will be insensitive to a range of interest rate changes.

Given that the existence of a socially determined minimal consumption level is sufficient to contradict the independence proposition in theory and that other theoretical considerations lead to a questioning of the proposition, it is fortunate that Friend and Kravis [3] have brought data to bear on the issue. They note that there is a high positive correlation between the average incomes of various occupational groups and their consumption-income ratios. Watts [8], too, has brought ex-

 1 The Klein-Liviatan interpretation also involves a very low if not zero marginal propensity to save at low permanent income levels. This is not inconsistent with the analysis of Figure 1 if it is assumed that the minimal consumption level adjusts upward easily. On the other hand, in the data studied by Klein and Liviatan, investment in children, probably important in underdeveloped economies, is not included in saving, a consideration very pertinent when alternative forms of saving are either unavailable or yield lower rates of return. Given a constant C_m , an increment in permanent income at very low-levels might very well be associated with an increase in family size, an act of saving, with consumption remaining at the subsistence level. In this case, the departure from an initial situation involving an average propensity to consume equal to one is associated with a marginal propensity to save of one. It is also relevant to note that in some cultures wives are regarded as consumer and/or producer durables.

tensive Survey Research Center data to bear on the independence proposition in much the same manner as Friend and Kravis. His conclusion is that "the evidence...does not suggest that the average level of income alone determines the average propensity to save..., but neither does it suggest that mean income is entirely irrelevant." [8, page 140] Finally, additional data relating to Sweden [2, page 41] and the U.K. [1, page 264], while hardly as extensive as could be desired, provide no obvious support for the independence proposition.

Shown in Table 1 are BLS-Wharton School 1950 data relating to consuming units with at least two members, headed by an employed male and classified by homeowner-renter status and household head's age and level of education. In total twenty-four samples of data, twelve for homeowners and twelve for renters have been employed. For these data it is seen that the ratio of mean consumption (including expenditures on durables) to mean income within age groups tends to be lowest for cells characterized by highest mean income and highest educational level. Application of Friedman's analysis of variance by ranks to the consumption-income ratios ranked within age groups yields a $\chi_r^2 = 9.25$. A value equal to this or greater would occur with probability 0.008 under the null hypothesis that the ranking within rows is random.²

The results of these calculations could be explained by a breakdown of the independence proposition. However, it is recognized that there are other possible explanations; namely, (1) they are due to a family size effect (smaller family size at higher educational levels within each age group), (2) a greater knowledge and availability of saving opportunities, contractual and noncontractual, at higher educational levels, (3) greater thriftiness at higher educational levels due to the nature of education in the U.S., and (4) inclusion of durable expenditure in consumption if a higher proportion of saving at lower educational levels takes this form. While, admittedly, alternative explanations are available, it would seem rash at this time to rule out entirely a breakdown of the independence proposition as a possible explanation of the results.

Another way of testing the independence proposition is suggested in Friedman's work [2, pages 200–201] where he states that, provided transient elements average to zero, just as his theory "requires that the measured income elasticity of consumption be less than unity and would be contradicted by observed elasticities greater than unity, so it requires that the measured consumption elasticity of income be less than unity and would be contradicted by observed elasticities greater than unity." Also, he notes that the implication of this hypothesis for arithmetically linear regressions is that the intercepts of the regression of measured

 $^{^2}$ See [6, pp.166 ff.]. Table N, p. 280, in this reference was used to obtain the probability 0.008 cited in the text.

TABLE 1 AVERAGE INCOME AND CONSUMPTION-INCOME RATIOS FOR UNITED STATES HOUSEHOLDS HEADED BY EMPLOYED MALES WITH AT LEAST TWO MEMBERS, 1950*

	Household Head's Years of Formal Education						
AGE OF HOUSEHOLD HEAD	0–8		9–12		13-		
	9	ē/ÿ	59	ē∕ÿ	5	č/ÿ	
Homeowners 25–34	\$3,871	0.991 (2)†	\$4,347	1.002	\$5,198	0.975 (1)	
35–44	4,057	1.037	4,865	0.988 (2)	7,368	0.940 (1)	
45–54	4,549	1.004 (2)	5,409	1.007	7,298	0.953 (1)	
55–75	4,020	1.018 (3)	5,014	0.966 (2)	7,445‡	0.803‡ (1)	
Renters 25-34	3,142	1.065 (3)	3,838	1.060	4,331	1.061 (2)	
35–44	3,464	1.062 (2)	4,164	1.063	5,490	0.984 (1)	
45-54	3,718	1.061 (2)	4,462	1.082	7,092	0.915 (1)	
55–75	3,401	1.016 (2)	4,059	1.085	5,303	1.004 (1)	

^{*} Sample sizes within cells range from 73 to 780 with a mean size = 350.

consumption on measured income and that of measured income on measured consumption are both positive. [2, page 201, fn. 2] This requirement may be viewed as a test of the hypothesis that $c_p = ky_p$ is the "true" relationship connecting permanent consumption and income against the alternative $c_p = ky_p + k_o$ with $k_o \neq 0^3$ (or more generally $c_p = ky_p^{\alpha} + k_o$).

This test was carried through employing BLS-Wharton School 1950 data relating to consuming units with at least two members, headed by an employed male and classified by homeowner-renter status, level of education, and household head's age. In all, twenty-four samples of data were employed, twelve for homeowners and twelve for renters.

It is not to be expected that transient elements will average to zero for consuming units classified by age. Before the calculations were performed, the following inferences were made regarding the algebraic signs of the mean transient components as a function of age.

[†] Figures in parentheses are ranks assigned to consumption-income ratios within age groups. † One household in this cell with an income of about \$100,000 excluded. SOURCE: BLS-Wharton School 1950 Survey data.

⁸ See [5] for a statistical discussion of this test

Age of Head of	Algebraic Sign*			
Consuming Unit	Ē:	ÿ,		
25-34 35-44 45-54 55-75.	+	- + +		

^{*} Where no sign is shown, the mean transitory component is assumed to be equal to zero.

The signs of mean transient income are taken to be consistent with Friedman's position on this matter [2, page 91]. For transitory consumption the means deviate from zero because net investment in durables, probably positive for the youngest age group and negative for the oldest age group, is included in consumption rather than in saving in the available data. Further, since the data probably understate saving and because there was "scare-buying" of durables in 1950, the mean transient component of consumption might very well be positive for all groups.⁴

The fact that the mean transient components are not equal to zero will affect the values of the intercepts, $a_{c\cdot v}$, that of consumption on income, and $a_{v\cdot c}$, that of income on consumption, which are given by the following expressions according to Friedman's theory [2, page 33]:

$$a_{c\cdot y} = \bar{c} - b_{c\cdot y}\bar{y} = \bar{c}_t - kP_y\bar{y}_t + k(1 - P_y)\bar{y}_p$$

$$a_{y\cdot c} = \bar{y} - b_{y\cdot c}\bar{c} = \bar{y}_t - P_c\bar{c}_t/k + (1 - P_c)\bar{c}_n/k$$

where subscript t denotes transient elements, subscript p permanent components, a bar sample means, and P_v and P_c represent the proportion of the variance of measured income and consumption accounted for by permanent components of income and consumption, respectively. In particular, a positive \bar{c}_t and a negative \bar{y}_t , as might be encountered for the lowest age class, could produce a negative $a_{v \cdot c}$. In a sense then in certain cases and perhaps over-all (since \bar{c}_t may be positive in all cells) the test appears biased against the Friedman hypothesis. However, it should be noted that even if, for example, $c_p = ky_p + k_o$ were the true relation, both intercepts could be positive for a range of values for k_o .

Shown in Table 2 are the intercepts $a_{v\cdot v}$ and $a_{v\cdot c}$ and elasticities (calculated at sample means) $\eta_{v\cdot v}$ and $\eta_{v\cdot c}$. It is seen that in twenty-one of twenty-four cases the results are those required by Friedman's theory when the mean transient components equal zero. However, in these samples the mean transient components do not equal zero and further none of the contrary cases occurred in the lowest age class where from

⁵ The same consideration applies to the values of the two elasticities mentioned aboves.

⁴ That unobservable quantities play such an important role in interpreting empirical result is hardly a desirable state of affairs.

considerations presented above they should most likely occur. This may indicate that the test is not very powerful.

To produce a situation in which the age dependence of the mean transient components does not complicate the results, the age variable was collapsed and the test was performed with six samples of homeowners and renters classified by the household head's educational level. The results in Table 3 show one case in six contradicting the require-

TABLE 2

ELASTICITIES AND REGRESSION INTERCEPTS FOR UNITED STATES HOUSEHOLDS HEADED
BY EMPLOYED MALES WITH AT LEAST TWO MEMBERS, 1950

	I	Iomeowner	S		RENTERS	
AGE OF HOUSEHOLD HEAD	Yea	rs of Educa	tion	Yea	rs of Educa	tion
	0–8	9–12	13-	0–8	9–12	13-
$25-34$: $\eta_{c\cdot y}$	0.930	0.694	0.561	0.885	0.756	0.670
	0.715	0.682	0.995	0.876	0.726	0.803
	270	1,334	2,225	386	991	1,518
	1,105	1,384	24	389	1,051	852
35-44: ¬¬-y	0.924	0.512	0.737	0.902	0.673	0.502
	0.578	0.898	0.905	0.833	0.851	1.085
	319	2,345	1,818	360	1,447	2,687
	1,710	494	697	577	618	-469
45 – 54 : $\eta_{c\cdot y}$ $\eta_{y\cdot c}$ $a_{c\cdot y}$ $a_{y\cdot c}$	0.765	0.739	0.849	0.748	0.629	0.561
	0.774	0.881	0.774	0.935	0.768	1.559
	1,075	1,420	1,048	992	1,793	2,851
	1,027	642	1,651	242	1,036	-3,968
$55-74$: $\eta_{c\cdot y}$. $\eta_{y\cdot c}$. $a_{c\cdot y}$. $a_{y\cdot c}$.	0.789	0.878	0.805	0.693	0.903	0.709
	0.890	0.622	0.560	1.077	0.883	0.746
	861	589	1,166	1,008	426	1,549
	441	1,897	3,273	-262	473	1,346

Source: BLS-Wharton School Survey data.

ments of Friedman's theory. Given that \bar{c}_t is probably positive for all samples which makes for a negative $a_{v.e}$ and that the number of cases is small, a generous interpretation of the results is to say that they meet the requirements of Friedman's theory. Even if this generous interpretation is adopted, however, this is not to say that the test rules out the possibility that the true relation is, for example, $c_p = ky_p + k_o$, with k_o a small but economically significant constant, rather than $c_p = ky_p$. If the true relation were $c_p = 0.9 \ y_p + 50$, then at a $y_p = 500$ the ratio $c_p/y_p = 1.0$ and at $y_p = 2,000$ the same ratio would equal 0.925. Thus the value of 50 for k_o is economically significant. However, this value is compatible

with positive intercepts for reasonable values of P_c and P_u and values of \bar{y}_p and \bar{c}_p at about the levels employed in this study. This implies that this particular test is probably not very powerful against economically important alternatives.

In summary, an additional theoretical argument has been developed which makes the independence proposition and propositions derived from it logically suspect. Reference has been made to data published

TABLE 3 ELASTICITIES AND REGRESSION INTERCEPTS FOR UNITED STATES HOUSEHOLDS HEADED BY EMPLOYED MALES WITH AT LEAST TWO MEMBERS, 1950*†

Homeowner-		YEARS OF EDUCATION	
RENTER STATUS	0-8	9–12	13-
Homeowners: η _{c·y}	0.797	0.704	0.751
ημ.σ	0.822	0.766	0.799
a _{c·y}	\$ 860 (112)	\$1,434 (79)	\$1,582 (155)
a _{y·e} ,	\$ 790 (69)	\$1,142 (86)	\$1,376 (176)
Renters:	0.723	0.733	0.530
$\eta_{y \cdot c}$	0.988	0.805	1.449
a _{c·y}	\$1,006 (49)	\$1,151 (70)	\$2,425 (85)
a _{y·c}	\$ 43 (62)	\$ 790 (72)	-\$2,308 (184)

^{*} Figures in parentheses are standard errors of regression intercepts. As described in [5 these may be employed to test hypotheses regarding the true intercepts. As described in [5] these may be employed to test hypotheses regarding the true intercepts; however, since the test involves a normality assumption, its usefulness for present purposes is doubtful. † Cell sample sizes range from 734 to 1,996 with a mean equal to 1,400. Source: BLS-Wharton School Survey data.

by others which are consistent with the notion that the independence proposition is empirically invalid. This is an interpretation which can be put forward to explain the variation of consumption-income ratios with educational level (and mean income) within age groups noted in this study; however, alternative explanations are available which must be admitted until the results of further research are forthcoming. Finally, the results of a second set of calculations, which under a generous interpretation meet the requirements of Friedman's theory, cannot be interpreted as seriously supporting the independence proposition against economically important alternatives.

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LABOR SUPPLY, FAMILY INCOME, AND CONSUMPTION*

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Empirical data on income distribution are used for two distinct, though not unrelated, purposes. One is a study of factors determining the size of income; the other a study of effects of income distribution on spending patterns. In the first case, attention is paid mainly to the distribution of income among persons, usually adult males. In the second case, we insist on family disposable income as the appropriate concept.

Implicit in this sharp dichotomy between data requirements is the abstraction of individual decisions about income formation from their family context, and the abstraction of family decisions about the uses of income from the individual composition of that income. There has been some recognition of the interdependence between family status, personal income, and size of consumer unit.¹ But little effort has gone into investigating the manner in which individual incomes are pooled into a consumer unit total, and even less into exploring the consequences of this pooling on observed consumption behavior.

However, current consumption research explicitly recognizes that variations in consumption (saving) behavior only very remotely and imperfectly reflect variations in income totals of consumer units. According to the permanent income theory, for example, it is not the variation in total income but the relative sizes and variations in shortrun and long-run components of income which strongly affect saving patterns. In this light, the decomposition of family income into personal income of head of the unit, particularly when segregated into full-time and less-than-full-time income, and other family income which is largely contributed by an often sporadic labor force activity of other family members, becomes highly relevant.

The so-identified components of family income are of double interest: as determinants of saving and as reflections of labor force choices, which in turn are related to income both as cause and effect.

The report that follows is a summary of a preliminary analysis of the effects of family income composition on income levels, income

^{*}I am indebted to Dorothy S. Brady, Gary S. Becker, Phillip J. Nelson, and Jules Joskow for helpful comments.

¹ See D. S. Brady, "Individual Incomes and the Structure of Consumer Units," A.E.A. Papers and Proceedings, May, 1958; also, H. P. Miller, Income of the American People (Wiley, 1955).

dispersion, and saving behavior of consumer units. Data for this study were made available by the Bureau of Labor Statistics from the cards of the 1950 Survey of Consumer Expenditures. The data contain information on economic and other characteristics of individual earners and of urban consumer units of which they are members. The findings on income and consumption here presented are a by-product of a more extensive analysis focused on labor force behavior of family members. To facilitate the analysis at this stage, the subsample of consumer units

TABLE 1	
STRATIFICATION AND SAMPLE	Sizes*

	E	ducation of Hea	D
Age of Head	I	II	III
	Elementary†	High School‡	College§
A	139	747	283
Less than 35, oldest child less than 16	75	216	119
B	55	258	75
Less than 35, no small children	15	59	43
35-54 C	851	1,308	618
	287	280	139
55 and older	491	232	117
	221	113	25

^{*} Upper figures in cells refer to heads who worked full time year round; lower figures refer to heads who worked part period and/or part time.

was restricted to about 7,000 white, husband-wife families, excluding units with head self-employed or not in the labor force. The sample was stratified into four age-family type groups, three education groups, and two work-experience groups, as shown schematically in Table 1.

Earnings of Head and Income of Family

The difference between family income and earnings of head, to be called "other family income," consists of non-wage income and of income contributed by other family members. To the extent that this is labor income, it is mainly a contribution of the working wife. Labor force rates of wives generally parallel the size of other family income (Table 3), except at the older ages, when labor force participation of other family members becomes as important as that of the wife.

[†] Eight years or less.

¹ Nine to twelve years.

[§] Thirteen years or more.

On the average, other family income constitutes 21 per cent of family income before tax² and 14 per cent after tax. (The tax is subtracted from other family income, but not from earnings of head.) The before-tax figures are of interest as measures of labor effort. Monetary incentives are better reflected in the "net" figures. Both sets of family income data are presented in the tables.

Two effects of the "additional income" on family income, similar in nature, are indicated in the data. The first effect appears in the comparison of age-income profiles of heads with those of families

					LIJIM				
			<u> </u>	EDUC	ATION OF	HEAD			
	I—	Element	ary	II-	-High Sc	hool		II—Colle	ge
Age of Head		Family	Income		Family	Income		Family	Income
	Head	Before Tax	After Tax	Head	Before After Be		Before Tax	After Tax	
A Less than 35, oldest child less than 16	\$3,253 2,329	\$3,638 3,013	\$3,485 2,834	\$3,724 2,772	\$4,127 3,500	\$3,896 3,369	\$4,346 2,527	\$4,941 3,764	\$4,604 3,628
B Less than 35, no small chil- dren	3,291 2,407	4,642 3,866	4,249 3,633	3,467 2,385	4,850 4,361	4,413 4,054	4,166 1,902	6,040 4,212	5,387 3,911
35-54 ^C	3,636 2,395	4,641 3,581	4,297 3,386	4,135 2,871	5,023 4,142	4,624 3,846	5,996 3,442	7,078 4,706	6,236 4,363
D 55 and older	3,420 1,792	4,740 3,180	4,313 2,978	4,450 2,139	5,507 3,410	4,945 3,165	6,370 2,950	7,925 4,008	6,647 3,688

TABLE 2
INCOME LEVELS*

(Table 2). The age-income profiles of fully employed family heads, just as those of adult males in other studies, show the characteristic concavity with respect to the age axis and an increasing slope with increasing education. The age profiles of family income preserve the differential slopes by education, but the concavity almost vanishes, particularly when families with small children are left out. In other

^{*} Upper figures in cells refer to heads who worked full time year round; lower figures refer to heads who worked part period and/or part time.

² This compares with a figure of 17 per cent for urban husband-wife families in the Census Current Population Reports in recent years. Income rather than earnings of head is reported in the CPR. Other things equal, this would account for the difference.

TABLE 3
OTHER FAMILY INCOME AND LABOR FORCE RATE OF OTHER FAMILY MEMBERS*

					ľ	Æ	DUCAT	EDUCATION OF HEAD	EAD	ľ					
		I—E	I—Elementary	'n			н—п	II—High School	loc	•		Ħ	III—College		
Age of Head	Other Family Income	mily I	ncome	Labor Fc	Labor Force	- 1	amily	Other Family Income Labor Force	Labor Fe	Force	Other F	amily	Other Family Income	Labor Force	Force
	J. C.		A £4	P.G	ק	ç		4 64	124	<u>.</u>	۲		4.54	TV4	, Q
•	Tax		Tax	Wife	All	Derore.	v	Tax	Wife	All	Defore Tax	ၿ	Tax	Wife	All
A Less than 35, oldest child less than 16	\$ 385 684	10%\$ 19	232	.33	.33	\$ 403 728	10%	\$ 172 597	.30	.30	\$ 595	12% \$ 33 1	\$ 260	.18	.39
B Less than 35, no small children	1,351	38	958		29.	1,387	28 45	946	99:	.79	1,874 2,310	31 55	1,221 2,009	69.88.	.88
35-54 . C	1,005	33	661 991	£.4:	.56 .56	888 1,271	88	489 975	.33	35.	1,082	15 27	240 921	.38	.58
55 and older	1,320	28 43	897 1,186	.16	.51	1,057	19	495 1,026	.20	64.	1,555 1,058	20 27	277	.23	.40 .37

* Upper figures in cells refer to heads who worked full time year round; lower figures refer to heads who worked part time and/or part period.

words, family income levels are augmented most at both extremes of the age scale: in the most educated younger families and the least educated older families (Table 3). In the respective education groups, these are precisely the stages in the life cycle when income of the husband is lowest relative to its long-run level.

The second effect is the increased size of other family income when head's income is below its current full employment level. Table 3 reveals that this contribution is greater, not only relatively, but absolutely in all groups (except the highest age-education group) with not-fully employed heads, as compared with groups with fully employed heads, standardized by age, family type, and education.

Underlying the greater income contribution are the higher labor force rates of other family members, and of wives in particular. Their labor force behavior is clearly related to employment status of the head in all age-education groups (except the highest). Labor force rates of earners other than the wife respond to the life cycle by bolstering family income in the older and least educated group. But they are independent of the short-run employment differences. Evidently, doubling up and undoubling of families or relatives is less flexible than labor force status of the wife.

Income Dispersion

One of the findings of empirical research in income distribution is that income dispersion, absolute and relative, increases with age as well as with educational and occupational level of adult male income recipients. The phenomenon is partly explainable by the previously observed differential slopes of age-income profiles by education. According to Table 4, the pattern of increasing dispersion remains true also within age and education classes, when standardized for employment status. The transformation of personal income of heads into family income does not affect this result.

Of more immediate interest, however, are the contrasting effects of family "additional" incomes on income dispersion when the two separate employment groups are compared in each cell (Table 4). In the fully employed groups, standard deviations of family income (before tax) are distinctly greater than the same measures of heads' incomes. Where the head was not fully employed, standard deviations are almost unchanged in the two largest age groups (head less than 35 with small children, and head 35-55 years of age) and increase among the couples with young children and in the oldest families. The differential effect on relative income inequality is much clearer. When the head is fully employed, family income inequality (before

TA	BLE	4
INCOME	DISPE	RSION*

		!			EDUC	ATION OF	HEAD			
		I—	Element	ary	II-	-High Sc	hool	l II	IColle	ge
Age of Head			Family	Income		Family	Income		Family	Income
		Head	Before Tax	After Tax	Head	Before Tax	After Tax	Head	Before Tax	After Tax
A Less than 35, oldest child less than 16	σ	\$1,030 1,152	\$1,270 1,078	\$1,131 980	\$1,184 1,456	\$1,267 1,261	\$1,100 1,152	\$1,943 1,793	\$2,105 1,583	\$1,767 1,474
	7	.317 .495	.349 .358	.325 .346	.318 .525	.307 .360	.282 .342	.447 .709	.426 .421	.384 .406
B Less than 35, no small children	σ	1,014 1,198	1,297 1,755	1,115 1,645	1,077 1,335	1,523 1,912	1,289 1,725	2,396 1,253	4,216 1,353	3,534 1,192
	9	.308 .500	.280 .454	.262 .453	.311 .560	.314 .438	.292 .426	.575 .659	.698 .321	.656 .305
C 35-54	σ	1,245 1,266	1,769 1,579	1,543 1,416	1,767 2,705	2,062 2,792	1,732 2,005	3,688 2,858	4,953 2,668	3,552 2,475
	Đ	.342 .529	.381 .441	.359 .418	.427 .942	.410 .674	.375 .521	.616 .830	.700 .567	.569 .567
55 and older	σ	1,492 1,285	2,927 1,831	2,502 1,637	2,607 1,639	3,045 1,984	2,649 1,788	5,586 2,615	8,118 4,282	5,163 3,522
	Đ	.436 .717	.617 .576	.580 .550	.586 .766	.553 .582	.536 .565	.877 .886	1.024 1.068	.777 .955

^{*} Upper figures in cells refer to heads who worked full time year round; lower figures refer to heads who worked part period and/or part time. σ=standard deviation; v=coefficient of variation.

tax) slightly exceeds personal (heads) income inequality. When the head is not fully employed, family income inequality is reduced in comparison to the personal income distribution. The two effects seem to balance in the aggregate. Inequality measures based on the family income distribution are very close to those derived from the income distribution of heads.

The coefficients of variation do not tell us more than the standard deviations and the means. Their reduction in the not-fully employed groups is primarily attributable to the higher levels of "supplementary" income in these groups. The standard deviations are more helpful in interpretating underlying behavior.

If, on an individual level, other family income (x_0) were positively related to or independent of head's earnings (x_h) , the variance of family income would necessarily exceed the variance of head's earnings. Equality of the two variances implies a negative correlation between head's earnings and other family income. However, even if the correlation is inverse, the variance of family income could exceed the variance of head's earnings. It largely depends on the strength of the

negative correlation between the two components of family income.³

Indeed, the correlation between head's earnings and other family income was quite weak, and sometimes positive, in the fully employed groups, but consistently negative in the not-fully employed groups (except for the highest age-education group—see Table 5). At the same time. Table 5 reveals a stronger negative correlation between husbands' earnings and labor force rates of wives in these groups. Once again, the relations carry a suggestion that negative transitories

TABLE 5 CORRELATION BETWEEN COMPONENTS OF FAMILY INCOME AND LABOR FORCE PARTICIPATION*

			EDUCATIO	n of Head	F HEAD				
Age of Head	I—Elei	mentary	II—Hig	h School	III—	College			
	r(o, h)†	r(1, h)‡	r(o, h)	r(1, h)	r(o, h)	r(1, h)			
A Less than 35, oldest child less than 16	+.172 454	+.143 239	141 422	119 295	142 495	222 121			
B Less than 35, no small children	188 416	332 622	040 200	042 161	+.452 335	319 132			
C 35–54	083 230	120 532	096 250	178 233	026 332	278 336			
D 55 and older	+.171 140	135 104	074 245	153 304	+.386 +.132	186 142			

^{*} Upper figures in cells refer to heads who worked full time year round; lower figures refer

to heads who worked part period and/or part time.

† Correlation coefficient between earnings of heads and income of other family members. t Correlation coefficient between earnings of heads and labor force rate of wives.

in the income of the main breadwinner induce an expansion of labor market activities on the part of married women.

Fortunately, this hypothesis is amenable to a test. In addition to the information on incomes and labor force rates, the data provide information on the number of weeks worked by each family head. Consider a group of families, standardized by age and education, whose heads worked different numbers of weeks during the year, yet had the same head's income over the year. If labor force rates of wives

$$\sigma^2(x_F) = \sigma^2(x_h) + \sigma^2(x_0) + 2r(x_{01}x_h)\sigma(x_h)\sigma(x_0)$$

² It also depends on the dispersion of x_0 relative to that of x_h . This was much greater in the oldest and youngest, but childless, families, which explains the exceptions mentioned in the text. Cf. the well-known formula:

were related to current level of husbands' income, we would expect no correlation between weeks worked by the husband and labor force participation of the wife. We would expect this correlation to be positive if labor force activities of wives were inversely related only to permanent levels of income; clearly, it takes a greater earning power to achieve the same income with fewer weeks of work. The test is provided by the sign of the partial correlation coefficient between the labor force rate of wives and weeks worked by husbands, keeping husband's earnings constant. Except for the highest age-education group, the partial correlation coefficient was, in fact, negative in all cells, thus confirming the strategic importance of transitory income for the purpose of understanding labor force behavior.

Composition of Family Income and Consumption

The permanent income theory is a convenient framework for applying the insights gained in the decomposition of family income to the study of consumption. Family income consists of four parts: permanent income of head, his transitory income, other permanent income, and other transitory income. The classifications in this empirical analysis do not exactly parallel such a breakdown, but they do segregate three income distributions, differing strongly in terms of transitory income components. Full-time earnings of heads contain a minimum of transitories connected with employment. Earnings of not-fully employed heads contain a large variation of such negative transitories. The degree to which the incomes of other family members are to be viewed as permanent or transitory depends on the expected degree of permanence of the attachment of these members to the labor force and on the income horizon of the consumer unit. The well-known extent of labor force turnover of these earners, and of wives in particular, suggests that their incomes are, on the average, likely to be weighted with some amount of positive transitories. And, as we have seen, in cases where labor of the main breadwinner is not fully utilized, such positive transitories may be expanded in order to offset some of the negative deviation from normal income level.

The hypothesis on the nature of income of other family members implies that in families with the same total income saving plus purchases of durables (net of depreciation) is larger the smaller the income of the head, provided the size of that income is not affected by transitory components. Unfortunately, the data at our disposal do not lump purchases of durables with saving, nor do they contain separate information on durables. Evidence on durables reported in a 1956 Census Bureau survey of 26,000 households appears to be con-

sistent with the hypothesis. According to the report, for every family income class, the proportions of car buyers are greater among married-couple families in which the wife is an additional worker than among households in which there is only one worker. Purchases were lower for households where heads were unemployed or on a reduced work schedule. However, comparisons with income and with labor force status of wives in such families were not reported.

The fact that purchases of durables are excluded from figures on saving in 1950 could obscure the relation between family income composition and saving. Nevertheless, the partial correlation between earnings of fully employed heads and saving, keeping family income constant, was negative as expected, except in the lowest education group, age thirty-five and over, and highest education group, age fifty-five and over. The exceptions are the population groups in which income of other family members and property income, respectively, are likely to be a permanent feature of family income. Also, the negative correlations vanish or turn positive in almost all strata when the heads are not fully employed. This result is consistent with the hypothesis that the supplementary income serves to absorb some of the negative transitories when these are present in head's income.

But how strong is this cushioning effect? That is, what proportion of the income loss is offset by the supplementary income, or supplementary labor input? This question can be answered by comparing the loss of head's earnings due to a week's loss of work with the loss of family income associated with it. A rough estimate is obtained by subtracting from unity the ratio of two regression slopes: family income on weeks worked by head, to head's earnings on weeks worked by him. This was done in all cells, with the following results: In the younger and less educated groups, about a half of the income loss is offset; in the older and more educated groups, the proportion is less than 25 per cent. The proportion of transitories which are offset by the supplementary income is inversely related to age in each education group and to education in each age group. These findings are consistent with an interpretation that supplementary labor input of family members can be an alternative to dissaving—an alternative which is resorted to when the means for dissaving are scant or illiquid.

The existence of a labor force response to transitory income leads to other implications, two of which I shall mention here: (1) labor force rates of wives should be positively related to variances of heads' incomes, given the same lifetime levels of heads' income; (2) at the same current income of head, higher labor force rates should be ob-

⁴Bd. of Govs. of Fed. Res. System, Consumer Instalment Credit Conference, Part I, Vol. 2, Sup. IV, pp. 191-92.

served in higher education and occupation groups. The evidence in scattered census materials is apparently consistent with these propositions, but it requires a more careful analysis, including consideration of other factors influencing labor force participation.

While it would be premature to state specific conclusions at this stage of the investigation, one general impression deserves recognition as a guide to future research: Family income formation, consumption, and labor force behavior—all are, to some degree, aspects of a simultaneous choice situation. Insights in any one of these three fields should be helpful in understanding the other two.

TRANSITORY INCOME AND EXPENDITURES ON CONSUMPTION CATEGORIES*

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In a recent study of the 1950 Survey of Consumer Expenditures an interesting case of windfall income was used to test an important element of the permanent income hypothesis.2 The case in point was a special life insurance dividend payment made by the government to qualifying veterans in 1950 and the element subjected to empirical test was the postulate that consumption and transitory income are uncorrelated.

Under the permanent income hypothesis, windfall income (in this case, the dividend payment) should affect consumption only insofar as it can be argued that the windfall raises the permanent income of the individual recipient by some increment. With several assumptions (which shall be further discussed later in this paper), Professor Friedman had predicted that the marginal propensity to consume out of the dividend payment should be "about .3, or so." For some 1,400 veterans in the 1950 BLS Survey of Consumer Expenditures who received the dividend in 1950, however, the marginal propensity to consume out of the windfall was found to be both substantially and significantly larger than .3.4 The results thus appeared to contradict the assumed lack of correlation between consumption and transitory income.

*This paper is based on research undertaken in connection with a broad Study of Con-Ins paper is based on research undertaken in connection with a broad Study of Consumer Expenditures, Incomes and Savings at the Wharton School of Finance and Commerce of the University of Pennsylvania. The study is based largely on the 1950 Survey of the Bureau of Labor Statistics of 12,500 families in ninety-one representative cities, and is carried out in co-operation with that agency. It is financed by a grant from the Ford Foundation. I am indebted to Professor Irwin Friend for his suggestions and helpful comments.

² Friedman, op. cit., p. 215.

Bodkin's results were:

$$C = 964 + .966w + .747 y$$
 , $C' = 959 + .723w + .560 y$ (.145) (.017) (.109) (.012)

where C is total consumption including durable purchases; C' is total consumption excluding durables; y is current (1950) income net of the dividend payment, and w is the dividend payment. The two equations are used since consumption as defined by Friedman falls somewhere between C and C' but presumably is closer to the latter. That is, consumption is defined to include all expenditures on nondurable goods and services plus the value of services rendered by durable goods in a time period but not the total cost of durables purchases.

² R. Bodkin, "Windfall Income and Consumption," A.E.R., Sept., 1959.

² M. Friedman, A Theory of the Consumption Function (Princeton Univ. Press, 1957).

These findings raise the question of how the dividend payment affected individual categories of consumption and lead to a more general question of the nature of the pattern of spending out of windfall or irregular income vis-à-vis the pattern of spending out of regular income. This paper summarizes some preliminary findings of a study of these questions utilizing again data from the 1950 BLS Survey of Consumer Expenditures. While cognizant of the limitations of this single piece of evidence, we feel it represents an important data source for empirical studies of the questions posed above and for testing further the permanent income hypothesis and its implications for the pattern of spending of consumers receiving windfalls.⁵

Windfalls as Transitory or Permanent Income

There seems little doubt that the National Service Life Insurance dividend payment in 1950 is properly classified as a windfall. Arising from mortality experience in World War II that was more favorable than expected, the payments were described as a "special dividend." Statements reflecting the dividends earned on each policy were enclosed with the dividend checks but no mention was made about any future dividends. (The dividend paid in 1951 was also a special dividend. Regular annual dividends were not declared until 1952.)

In the context of the permanent income hypothesis it is then necessary to relate the windfall to concepts of transitory and permanent income. In a strict interpretation of the hypothesis, it might be held that the dividend payment represents all transitory income since it was an accidental or chance occurrence and presumably did not give rise to anticipations of further income from the same source.

Under an alternative line of reasoning, however, windfalls do raise the permanent income level of the recipient. If one conceives of a consumer as estimating his individual wealth, W, as the value of future expected receipts discounted to the present at some subjective rate (or average of rates), r, then permanent income y_p , is defined as $r \cdot W$. As the windfall (whether it be a cash windfall with receipts at one point in time as in the present case or other types of windfall) increases W, then y_p is increased by $r \cdot \triangle W$. While under this argument windfalls always raise permanent income, their effect on transitory income is more diverse, depending upon the pattern of receipts associated with the windfall.

⁸ For an earlier study dealing with the assumed constancy of the consumption-income ratio, see I. Friend and I. Kravis, "Consumption Patterns and Permanent Income," A.E.A.

Papers and Proceedings, May, 1957.

Friedman, op. cit., pp. 21-22.

M. Friedman, "Comments," Proceedings of the Conference on Consumption and Saving, Wharton School of Finance and Comments, 459, forthcoming. It should be noted that there is an explicit assumption that r does not change.

Windfall Income and Consumption Patterns

The distinction in the two interpretations of the permanent income hypothesis is clearly important in determining the hypothesized estimates of the effect of the dividend payment on consumption patterns. If the windfall were held to be all transitory income, the permanent income hypothesis would predict that the marginal propensity to consume (total consumption) out of the dividend payment would be zero since consumption and transitory income are uncorrelated. It follows that the marginal propensity to consume any item of consumption would also be expected to be zero. A test of this interpretation of the permanent income hypothesis would be straightforward enough.

However, if it is held that permanent income is increased by the windfall, then total consumption would be affected in proportion to the increment to permanent income. Under this argument the predicted marginal propensity to consume out of the dividend payment would be somewhat less than the m.p.c. out of permanent income since the dividend payment represents a mixture of permanent and transitory income. More precisely, the predicted m.p.c. out of the windfall would be $k \cdot r$, where k is the m.p.c. (total consumption) out of permanent income (and is the hypothesized constant ratio between permanent consumption and permanent income) and r is the proportion of windfall added to permanent income. The latter fraction is estimated by the reciprocal of the number of years in the consumer's horizon, and is in fact the consumer's rate of discount. On the basis of empirical evidence, Friedman assumes k to be about .9 and r to be about .33 for all consumers in the United States.

The implications of this second interpretation for individual categories of consumption are not as definite as with the first interpretation. In the first place, the hypothesis that total consumption is a constant function of permanent income has no necessary implications for the nature of the functional relationship between any consumption item and permanent income. Second, it is possibly more meaningful to consider that the horizon for planning purposes with respect to a particular budget item can differ from the consumer's horizon for another budget item. Thus permanent income for food expenditures may differ from permanent income for housing expenditures if the latter are planned over a longer period of time. The loss of generality and simplicity due to this latter possibility (wholly apart from the empirical complications) clearly detracts from the potential usefulness of the permanent income hypothesis in an analysis of the determinants of expenditures for categories of consumption.

In any case, if there is no correlation between transitory income

and consumption, the dividend payment would be expected to raise expenditures on any budget item less, at a given income level, than if a corresponding amount of increase in permanent income had taken place. Just how much less would depend upon the assumptions made with respect to the proportion of windfall income added to permanent income.

Empirical Results

Turning now to our initial empirical findings, we may look first at the results obtained when the relationship between budget items and the dividend payment is estimated by the use of multiple regression techniques. The net relationship between the dependent variable and the independent variables was assumed to be linear, i.e., of the form,

$$(1) x_i = a_i + b_i w + c_i y,$$

where x_i represents expenditures on the *i*-th budget item, w is income received from the dividend payment, and y is all other income. The basic data for the calculations are drawn from 1,414 families where

TABLE 1

Partial Coefficients for Three Expenditure Categories with Respect to Dividend Payment (b_i) and Other Income (c_i) for 1,414 Families (Standard Errors in Parentheses)

7	Partial Regress	SION COEFFICIENTS
Expenditure Category	b_i	Ci
Food	.248 (.045)	.144 (.005)
Housing	.092 (.039)	.072 (.005)
Clothing	.114 (.032)	.102 (.004)

the head of household is a wage or salary earner and is between twentyone and forty-five years of age and the family size is two to four persons.

The results as they appear in Table 1 are in some respects surprising. The partial coefficients with respect to the windfall (b_i) are seen to be about the same as or slightly higher than the partial coefficients with respect to other income (c_i) for housing and clothing but b is substantially higher than c in the case of food expenditures. While these initial coefficients (which may be termed gross coefficients, in the sense that no independent variables apart from income are fully considered) obviously require rationalization or further exploration,

TABLE 2

Partial Coefficients for Three Expenditure Categories with Respect to Dividend Payment (b_i) and Other Income (c_i) for Families in Two Income Ranges (Standard Errors in Parentheses)

Expenditure Category	Income, \$1,	000-\$3,999 774)	INCOME, \$4,	000-\$9,999 630)
	b_i	c_i b_i c_i .166 .240 .153 (.016) (.083) (.004) .088 .099 .059 (.013) (.061) (.003) .081 .182 .120		
Food	.227 (.061)			.153 (.004)
Housing	.083 (.049)			.059 (.003)
Clothing	.024 (.038)	.081 (.010)	.182 (.052)	.120 (.009)

let us consider them in light of the permanent income hypothesis. The coefficient c is not of course an unbiased estimate of the marginal propensity to consume out of permanent income. The bias here stems from the presence of transitory income at low incomes (largely negative) and at high incomes (largely positive) in the current income values. To obtain an estimate of the relationship between the budget items and permanent income, we grouped the families by income class and computed mean expenditures for the three budget items and for total (nondurable) consumption. The regressions between the means for each budget item and the means of total consumption give the following estimated coefficients with respect to permanent income: food, .27; housing, .12; clothing, .18. An implicit assumption in the above calculations is that the income horizon for the individual expenditure items and for total consumption is the same.

As noted earlier, if the dividend payment were held to be all transitory income, the permanent income hypothesis would predict zero for all coefficients b_i in equation (1). If the dividend payment raises, or is associated with higher, permanent income, on the other hand, we would expect the b_i coefficients to be considerably less than the permanent income coefficients estimated above (about one-third as much) due to the presence of transitory income. In either case, the results in Table 1 do not support the assumption of a lack of correlation between consumption and transitory income.

By reducing the somewhat restrictive linearity assumptions of equation (1) to narrower income ranges, we obtain the results given in Table 2. Interestingly enough, the b coefficient for food remains

Friedman, Theory of the Consumption Function, op. cit., D. 207.

high at both income levels while that for clothing shows a marked tendency to increase.

In a further test, windfall income was related to the three major budget items in each of three income classes (so that income is held roughly constant). The results as shown in Table 3 are derived from a frequency-weighted regression analysis of mean expenditures on mean windfall income where the families are classified by ten-dollar levels of the latter variable. In each income class the marginal propensity to consume food out of windfall approximates the estimates in Tables 1 and 2. The coefficient of housing varies widely and the coefficient for clothing again shows some tendency to increase with income.

In all the above results, with the possible exception of housing, there is consistent evidence of a propensity to consume from the windfall as

TABLE 3
Frequency-Weighted Regressions* of Three Expenditure Categories and Dividend Payment within Three Income Classes (Grouped Data)

INCOME CLASS	Number	Fo	αοο	Нот	SING	CLO	THING
INCOME CLASS	OF FAMILIES	a_i	b_i	a_i	b_i	a_i	b_i
\$2,000-\$2,999 \$4,000-\$4,999 \$5,000-\$5,999	306 294 112	\$ 884 1,181 1,313	+.214 +.227 +.271	\$380 517 577	006 +.093 +.196	\$278 443 536	+.119 +.216 +.291

^{*} $x_i = a_i + bw_i$.

strong or stronger than the propensity to consume from regular income. It might be held that the results with respect to clothing are reasonable since such expenditures are relatively postponable and are in part lumpy in terms of price. Similarly, some expenditures out of the windfall may be expected to appear in the housing category since noncapital repairs and decorating costs by both homeowners and renters are included in the total expenditures for this budget item. However, the coefficients associated with food expenditures seem difficult to accept under any line of reasoning. It was possible to break down expenditures in this category into expenditures for food prepared at home and expenditures for meals out. For two income classes the results clearly suggested that the high food coefficients is not associated with meals out. In relating expenditures for meals out to the dividend payment the higher regression coefficient obtained was .03 while the corresponding coefficients for food at home remained at approximately .2. However, there remains the possibility that the coefficients are

⁹ Higher income classes held too few observations to yield reliable results.

reflecting the effects of missing variables partially or completely neglected in the analysis. We turn our attention therefore to an investigation of this possibility.

A primary question to be faced is, is the dividend payment in some way acting as a proxy variable for permanent income? The factors governing the amount of the dividend payment presumably were the amount of insurance retained by the veteran upon separation from the service and the length of the contract. It seems reasonable to suspect that the amount of insurance retained might have been related, to some extent at least, to a subjective estimate of income prospects by the insured, to his occupation, to his education, etc. The small but significant correlation between windfall and other (current) income in 1950, $r_{wy} = .09$, would appear to support this. Furthermore, the age of the veteran might be expected to be related to length of service (i.e., length of contract). As age as well as the factors associated with income prospects are related to permanent income, there is reason to suspect a relationship of dividends received to permanent income. However, the effect of these variables (age, occupation, education, etc.) on the coefficient of w would be limited to an effect apart from what is accounted for in the coefficient of y in equation (1). That is, if the missing variables are more strongly related to current income (which is plausible), their effects will tend to be absorbed by c_i , not by b_i .

Some simple statistical tests were employed to check on these possible relationships between windfall and other variables net of current income. The partial (linear) correlation coefficient for age and the dividend payment with income held constant is small and not significantly different from zero: $r_{aw} \cdot y = .041$ where δ_r is .027. Chi-square tests of independence between level of windfall and other family characteristics within income classes (so that income is again held only approximately constant) were also undertaken. Between windfall and occupation class the cross-classifications showed that salaried and professional workers tended to receive higher, and wage earners lower, windfalls at a given income level. Similar tests between windfall and in turn level of education, level of housing, and family size gave in each case some suggestion of direct associations but the values of chi-square were rarely significant. In sum, the evidence is not strong but there is some basis for suspecting a bias in the coefficient b_i .

To gain some idea of the magnitude of this possible bias we introduced additional variables in equation (1). In Table 4 it may be seen that the introduction of education reduces the b coefficient for housing but has little effect on the b coefficients for food and clothing. Similarly, the addition of family size reduces appreciably only the b coefficient for food. The 1,414 families were also subclassified by various characteris-

TABLE 4

Partial Coefficients for Three Expenditure Categories With Respect to Dividend Payment (bi), Other Income (ci), and Indicated Family Characteristic (di) for 1,414 Families

	Partial Regression Coefficients				
Expenditure Category —	b_i	Ci	d_i		
A. Level of education $(d_i)^*$ Food	+.257	+.145	-15		
	(.049)	(.005)	(12)		
Housing	+.047	+.066	+71		
	(.039)	(.004)	(10)		
Clothing	+.124	+.103	-17		
	(.034)	(.003)	(9)		
B. Family size (d _i)† Food	+.213	+.141	+117		
	(.046)	(.004)	(11)		
Housing	+.096	+.073	-11		
	(.040)	(.004)	(9)		
Clothing	+.110	+.102	+11		
	(.034)	(.003)	(8)		

^{*} Entered as a semiquantitative variable (1 for lowest level, 4 for highest level, of education).

TABLE 5

Partial Coefficients for Three Expenditure Items with Respect to Windfall Income (b_i) and Other Income (c_i) for Various Subgroups of Families

Type of	Number	Fo	OOD	Нот	SING	Cro	THING
FAMILY	OF FAMILIES	b_1	<i>c</i> ₁	b_2	C2	<i>b</i> ₃	C ₃
Homeowners	566	.290 (.082)	.139 (.008)	.110 (.067)	.066 (.007)	.180 (.055)	.098 (.005)
Renters	848	.220 (.061)	.148 (.008)	.104 (.049)	.095 (.006)	.114 (.043)	.083 (.006)
Owners, Cash in Bank	194	.080 (.138)	.154 (.024)	.140 (.090)	.085 (.015)	.155 (.072)	.082 (.012)
Owners, Cash in Bank >\$100	327	.316 (.112)	.136 (.034)	.049 (.098)	.072 (.009)	.137 (.079)	.104 (.008)
Owners, Level of Housing <\$10,000	337	.274 (.091)	.147	.117 (.067)	.046	.163 (.053)	.094 (.008)
Owners, Level of Housing>\$10,000	229	.269 (.155)	.125 (.012)	.001 (.129)	.053 (.010)	.188 (.115)	.095 (.009)
Age 28, 3-4 Persons	103	.235 (.153)	.139 (.021)	.170 (.132)	.064 (.019)	.133 (.101)	.115 (.014)

[†] In number of persons.

tics which might be expected to influence the windfall coefficient. The estimated coefficients for these groupings appear in Table 5. While there is some variability in the results obtained there is little evidence that the indicated characteristics would explain the coefficients obtained in Table 1.

In summary, these preliminary results indicate that there was a tendency to use the dividend payment for expenditures on the three major budget categories and that, in general, the propensities to consume were stronger than might be expected (given the assumptions made) under the permanent income hypothesis. Several cautions should be noted. While the calculations yielded reasonably consistent results the standard errors associated with the windfall variable were relatively large and, further, that while attempts have been made to control the possibility there remains the chance that the expenditure-windfall relationships are spurious.

Totally apart from the implications in terms of the permanent income hypothesis, the results are of some interest in themselves and would appear to raise several pertinent questions. We hope to pursue the analysis with respect to further budget categories, to consider the effect of size of windfall on patterns of consumption, and, if possible, to employ alternative data on transitory income in similar analyses.

SOME NEGLECTED FEATURES OF BRITAIN'S INCOME LEVELING*

By JOHN A. BRITTAIN Vanderbilt University

The apparent leveling of American incomes since the thirties has been called by Arthur F. Burns "one of the great social revolutions in history." Similar remarks have been made about the British experience. The basic evidence behind these conclusions is an unprecedented collapse of the relative share of top incomes reported on individual tax returns. This development has been thoroughly documented,2 but it should be kept in mind that it has been primarily a tax return income revolution and that its economic and social content are less clear. Economists have warned of the pitfalls in such by-product data as tax return incomes; yet in practice, as Morgenstern points out, "the professional users of economic and social statistics often seem to be less skeptical than the public."4 In the case of the income revolution, more skepticism seems in order.

I. A Critical Hypothesis

The general hypothesis advanced here is that in a time of rapidly advancing progressive taxation the individual tax return is an unreliable indicator of equality trends. The higher the tax rates, the greater the incentive to keep income off individual tax returns. Furthermore, the tax return income definition, which approximates personal income, is misleading and restrictive in the measurement of inequality. The term personal rules out collective income such as undistributed profits. The term income, in British tax law, virtually excludes capital gains. In short, the personal income definition excludes private income which

^{*}The writer is grateful for the advice of Professor R. G. D. Allen, Mr. H. S. Booker, and Mr. C. T. Saunders at an early stage, and for the later criticism of Professor Andreas G. Papandreou and Dr. Selma F. Goldsmith. However, all must be accorded the usual disassociation from the findings.

Arthur F. Burns, "Looking Forward," 31st Annual Report of the NBER (1951), p. 3.

The first comprehensive postwar work on British income size distributions was Dudley Seers, The Levelling of Incomes Since 1938. Mr. Seers considered postwar evidence in "Has the Distribution of Income Become More Unequal?" Bul. of Oxford Univ. Inst. of Statis., Feb., 1956, pp. 73-86. Mr. H. F. Lydall has recently reported a detailed study of the evidence in "The Long-Term Trend in the Size Distribution of Income," J. of Royal Statis. Soc., Series A, Part I, 1959, pp. 1-46.

^a Professor Hicks notes that the economist studying income must seek the assistance of the income tax authorities. "But it is the business of the theoretical economist to be able to criticize the practice of such authorities; he has no right to be found in their company himself!" (Value and Capital, p. 180, note.)

*Oskar Morgenstern, On the Accuracy of Economic Observations, p. 8.

may only have been transformed to avoid the individual tax return, without really having been alienated from individuals.

Such income transformations pertain primarily to property income, but this is not the whole story; in fact a double bias has been introduced into the evidence on income leveling. Since the thirties, the recipients of property income, unhampered by the withholding system, have taken advantage of new concessions and new ways to disguise taxable capacity; but in the same period, wage and salary earnings have come under the withholding system and are now caught more effectively in the tax collector's net than ever before. Whatever the merits of withholding, its impact on tax returns must inevitably exaggerate the relative gains of employment incomes since 1938.

In qualitative support of this skeptical view of the leveling of tax return incomes, it is useful to cite the parallel thesis of the "erosion of the tax base" which has appeared in the public finance literature in the work of Kaldor, Peacock, Pechman, and others.⁵ For example, Mr. Kaldor has written:

The exclusion of capital profits from the tax base leads to the conversion of taxable income into tax-free capital gains. Since this manoeuvre can in fact be accomplished within wide limits and through various channels the taxpayer finds that his taxable income, and therefore the size of his tax bill, is left in large measure to his own discretion, provided he is a man of property. Generous provision for business expenses invites the dressing up of personal expenses as business expenses and the dressing up of income payments as expense allowances.

The erosion argument has been stated in detail by various writers, and the existence of the phenomenon seems undisputed.7 From the point of view of public finance, the argument emphasizes inequity and inefficiency. Since it points to an erosion primarily of top incomes, it also implies that the income revolution is at least in part a statistical illusion. No complete analysis of this question can be attempted here,

⁶ Royal Commission on the Taxation of Profits and Income, *Final Report*, "Memorandum of Dissent," by G. Woodcock, H. L. Bullock, and N. Kaldor; Alan T. Peacock, "Some

dum of Dissent," by G. Woodcock, H. L. Bullock, and N. Kaldor; Alan T. Peacock, "Some Observations on the Report of the Royal Commission on the Taxation of Profits and Income," Nat. Tax J., Sept., 1957, pp. 255-65; Joseph A. Pechman, "Erosion of the Individual Income Tax," Nat. Tax J., Mar., 1957, pp. 1-25.

Royal Commission of the Taxation of Profits and Income, Final Report, "Memorandum of Dissent," p. 362. To illustrate the ambiguity and circularity of the income concept, Mr. Kaldor has put together two well-known judicial interpretations: "Income tax is a tax on income" (Lord MacNaghten, 1900); and "As regards the word income, it means such income as is within the Act taxable under the Act" (Lord Wrenbury, 1925). In Kaldor's words: "The law faces the same dilemma as the medieval Schoolmen who were forced to deny to exotic birds and beasts, captured by travellers in strange lands, the status of birds and beasts, since they relied for their definition on an exhaustive list of birds and beasts reported by tradition to have entered the ark with Noah." (Ob. cit., p. 357.) beasts reported by tradition to have entered the ark with Noah." (Op. cit., p. 357.)

Tother types of leakages from the tax base which have been mentioned are: liberalization

of allowances for depreciation and capital losses, greater liberality of concessions to investment income than to "earned" income, extended exemption of interest on national savings bonds and postal savings, extended relief for double taxation and compensation for foreign taxation, extended recognition of losses, increasing underassessment of income in kind and

of imputed income.

nor can the statistical argument and its qualifications be presented; still it may be useful to draw attention to certain features of Britain's income redistribution which tend to downgrade the economic importance of that phenomenon. This is done in the belief that such qualifications have been underemphasized, not only in Britain, but also in the United States.

II. The Distribution of Pre-tax Incomes

The Localized Nature of the Redistribution. The estimates in Table 1 show a striking relative loss of top personal incomes, but the process might be called a "trickle-down" income revolution. It depressed the

TABLE 1
ESTIMATED PERCENTAGE SHARES OF VARIOUS INCOME GROUPS
(Blue Book Data)

	Pre-tax			Post-tax		
Income Group	1938	1949	1955	1938	1949	1955
Top 1 per cent	16.8	11.3	8.9	12.3	6.6	5.4
Top 5 per cent	8.9 37.7*	23.9 9.3 42.7 24.1	20.1 9.1 46.9 23.9	25.6 9.3 40.4* 24.7*	17.8 9.4 46.0 26.9	15.6 9.2 49.2 26.0

^{*} These estimates were obtained by fitting a 4 parameter distribution function due to D. G. Champernowne to Blue Book data for the top 11 per cent plus the aggregate income reported for the rest of the distribution. (This function is discussed in D. G. Champernowne, "The Graduation of Income Distribution," *Econometrica*, Oct. 1952, pp. 591–615.) Other estimates are based on polynomial interpolation. The polynomials were fitted simultaneously to reported frequencies and aggregates. The method used was Newton's formula with divided differences, as outlined in E. T. Whittaker and G. Robinson, *The Calculus of Observations*, Chap. 2.

Source: National Income and Expenditure, 1956, Table 28.

top 5 per cent but apparently did little for the bottom half.⁸ The share of the second 5 per cent in rank was stable at about 9 per cent of the aggregate in all distributions. The main gainers appear to have been other income receivers above the median. The Gini concentration measures in Table 2 indicate that inequality was virtually unchanged among pre-tax incomes below the top 2 per cent. If the top 5 per cent are ex-

⁸ The evidence is weak on the latter point. The 1938 estimates were based on a distribution function due to Champernowne, as indicated in the footnote to Table 1. An alternative approach would have been to use the breakdown of the 125-250 pound interval given in the Annual Abstract of Statistics, 1954, p. 225. However, only 7.08 million incomes were reported in this range, and this figure is almost certainly too low; many earners failed to file since they knew that deductions would relieve them of taxes. The Champernowne fit shows 9.00 million incomes in the 125-250 pound range. Although the validity of the Champernowne estimate cannot be established, it is the more conservative estimate, given the general hypothesis of this paper. The Annual Abstract figures show a loss for the bottom half between 1938 and 1949 and a smaller move toward equality of the entire distribution than does the Champernowne estimate.

TABLE 2
ESTIMATED CONCENTRATION MEASURES* FOR BLUE BOOK DISTRIBUTIONS WITH CERTAIN TOP INCOME GROUPS EXCLUDED

GROUP EXCLUDED	Pre-tax			Post-tax		
	1938	1949	1955	1938	1949	1955
None	.445	.405	.384	.407	.347	.342
Top 2 per cent	.322	.324 .305	.324 .314	.314 .288	.301 .290	.306 .302

^{*} The concentration measure given is the Gini coefficient based on areas on the Lorenz diagram; the areas were obtained by numerical integration of complete interpolated distributions underlying Table 1.

cluded, the remaining incomes show an *increase* in pre-tax and post-tax concentration. This limited scope of the redistribution of personal incomes is important, because it shows that the impression of an income revolution is due entirely to the behavior of very high incomes and it is to them that we must turn for a tentative explanation.

The Erosion of Personal Income on Tax Returns. Evidence on erosion is scarce, but one thing stands out. Aggregate investment income reported in the tax return distributions rose only about 6 per cent between 1949 and 1955. In the same interval the preferred national income estimates by the Central Statistical Office show a 38 per cent gain in personal investment income.9 This lagging representation of investment income on tax returns may be due to new concessions, avoidance, estimating error, or all three, but in any case it spuriously levels the official distributions. Its effect is analyzed in Table 3 in terms of a convenient measure of spread: the standard deviation of the logarithm of income. 10 In order to step up investment income in the 1955 distribution to reflect the indicated 38 per cent rise after 1949, 300 million pounds was added and imputed to individuals in proportion to their reported investment income. This rough adjustment more or less halves the 1949-55 decline in inequality, as indicated in Table 3. It is not possible to make a similar check on the erosion of the tax base between the prewar and postwar years, but there are some indications. For example, the depreciation allowances of the self-employed were liberalized be-

restment income are based on company and government records.

This measure has some theoretical justification, but it was applied here because it could be adjusted conveniently for changes in the income variant. Furthermore, there is some evidence that this measure is closely correlated with two standard alternatives: the Gini coefficient and the charge of the tar for coeff.

coefficient and the share of the top 5 per cent.

⁹ The tax return distributions considered are the adjusted survey results provided by the Inland Revenue annual reports (Cmd. 8436, p. 117 and Cmnd. 54, p. 94). The adjusted distributions are emphasized because they are the basis of the Blue Book size distributions. The national income estimates of source aggregates are preferred, because they make certain adjustments for underreporting and include very low incomes. Estimates of personal investment income are based on company and government records.

TABLE 3

Pre-tax Inequality Measures* Before and After Two
Adjustments for the Erosion of the Tax Base

Income Variant	1938	1949	1955
(1) Original pre-tax Blue Book distributions	.2370	.2192	.2087
(2) Blue Book distributions after rough adjustments of 1955 data for newly missing investment income	.2370	.2192	.2144
(3) Blue Book distributions after imputing undistributed company income including stock appreciation, but net of capital consumption	.2466	. 2485	.2377
(4) Blue Book distributions after both adjustments in (2) and (3)	.2466	.2485	.2434

^{*} The measures recorded are the estimated values of the standard deviation of the logarithm of individual incomes for the top 70 per cent of all incomes. Variant (2) was obtained by imputing 300 million pounds to ranks in the 1955 distribution in proportion to reported investment income of each rank. In variant (3) the undistributed income to be imputed was derived from National Income and Expenditure, 1956, Tables 29 and 55. The imputation to income ranks was carried out through a modification of the pattern indicated for all investment income.

Qualifications

Unmeasurable aspects of the erosion of individual tax returns have not been allowed for.
 All measures have a substantial downward bias, because the tax return recipient unit hides a relatively stable disadvantage of large families; where temporal changes are indicated the relative changes are therefore exaggerated.

3. The assignment of missing investment income in variant (2) in proportion to reported investment income is a rough device. One recent thesis holds that much of it has gone into

life insurance companies for tax-saving reasons.

tween 1938 and 1949, so that they rose from 2 per cent to 7 per cent of gross income; whatever the economic merits of this concession, it produced an artificial lag in relatively high incomes.

The Rise in Undistributed Profits. The major factor in the erosion of individual tax returns and the second main qualification of the Blue Book distributions was the rise in undistributed profits. It removed from the individual tax return distributions the greater part of investment earnings ordinarily reported by high-income individuals.

Between 1938 and 1949, personal investment income lagged far behind other types of income. This might suggest a partial fulfillment of Keynes's dream of a euthanasia of the rentier. However, the main factor here was not a lag in company income as a whole; what happened was that the fraction of pre-tax company income (net of capital consumption estimates) paid out to persons fell from 71 per cent to 29 percent. If all pre-tax undistributed income is imputed to individual shareholders, the 1938 and 1949 Blue Book distributions show no leveling; this is demonstrated in Table 3, income variant (3).¹¹

¹¹ There is a qualification to this conclusion which deserves mention. It has been suggested that since companies can shift part of their tax burden, gross income figures, which

The imputation of undistributed income to individuals shows that the leveling hypothesis depends entirely on the increase in company taxes and savings. This kind of imputation has been criticized in the literature, and it is usually defended on the ground that company saving is likely to benefit the individual through potential dividends and capital gains. 12 There can be little doubt that total exclusion of these common savings is misleading and biases the distributions toward equality, but it is also true that they are sui generis and deserve special treatment.

Writings on the income revolution often given the impression that it was a "natural" phenomenon which proceeded "endogenously" or through some undirected tendency of the economic system. It came without basic social change; in fact not even the intervention of a welfare state was needed. For example, Professor Allen speaks of "a massive redistribution of income even before the incidence of taxation and social services is considered."13 This hypothesis that the personal income revolution came independently of fiscal policy cannot be appraised without going behind personal income and coming to grips with undistributed profits. This is true because even pre-tax personal income has already been affected by fiscal policy. Taxes on company profits rose from 11 per cent in 1938 to 27 per cent in 1949, thus reducing the amount available for distribution. Then, the fraction of this actually distributed was held down further by fiscal policy through demands for dividend restraint, discriminatory taxes on distributions, and expanded scope for surtax avoidance through nondistribution. If one accepts the hypothesis that these fiscal policies account for the declining rate of distribution, they also account for the leveling of pre-tax personal incomes. Thus the division of the pie at the accounting stage prior to the impact of fiscal policy on the size and disposition of corporate profits was about the same in 1949 as in 1938. The personal income distribution leveled because profits taxes rose and more of the net share of company owners was left in the kitty, thereby reducing taxes on their savings.14

include the full liability, may be inflated. Kaldor argues that this is not necessarily significant and points to a near doubling of net real company savings as evidence that the accumulations are not phantom. (An Expenditure Tax, pp. 148-51.)

¹² In the words of the Royal Commission on the Taxation of Profits and Income, "A process is detected which has the effect of adding to the capital of the shareholder though saving made out of the company's income without his share of the savings ever having

saving made out of the company's income without his share of the savings ever having been subjected to surtax as income in his hands." Royal Commission on the Taxation of Profits and Income, Final Report, p. 16.

13 Royal Commission on the Taxation of Profits and Income, Minutes of Evidence, Eighth Day, Friday, 30th May, 1952, p. 185 (emphasis added).

14 The Economist notes the scarcity of surtax payers and low surtax yield which "offend the evidence of one's eyes." It suggests in a "broad but not a wild guess," that distribution of one-half of gross undistributed profits in 1955 would have doubled the surtax yield. ("Erosion of the Tax Base—I: The Tax Skyscraper," The Economist, Feb. 9, 1957, p. 490.)

TABLE 4
INEQUALITY MEASURES* AFTER THE IMPACT OF FISCAL REDISTRIBUTION

Income Variant	1938	1949	1955
(1) Blue Book incomes before direct taxes	2370	.2192	.2087
(2) Blue Book incomes after direct taxes	2224	.1884	.1846
(3) Blue Book incomes after direct taxes and adjustments of 1955 for missing investment income		.1884	.1929
(4) Blue Book incomes after direct taxes and imputation of major divisible social service benefits †	2210	.1753	.1762
(5) Blue Book incomes after direct taxes, imputation of major divisible social service benefits and adjustment of 1955 for missing investment income		.1753	. 1845
(6) Variant (2) plus post-tax undistributed company income.		.2123	.2078
(7) Variant (3) plus post-tax undistributed company income		. 2123	.2161
(8) Variant (4) plus post-tax undistributed company income		.1986	.1981
(9) Variant (5) plus post-tax undistributed company income		.1986	.2064

^{*} See note to Table 3.

Qualifications

1, 2 and 3. Same as in Table 3.

4. Incomes have not been deflated to allow for differential price changes by income rank.

5. Benefits to individuals through government civil and military spending are excluded.

Under income variant (4) in Table 3, estimates are given of income concentration before the impact of fiscal policy. Pareto would have been pleased to add these estimates to his collection; they show a remarkable stability in the inequality measure, which contrasts sharply with the 12 per cent decline indicated by the official distributions for 1938 and 1955.

III. Income Distribution After the Impact of Fiscal Policy

Table 4 presents rough measures of income inequality after allowing for income taxes and major social service benefits. Variant (4) shows

[†] Benefits allocated were food subsidies, education, health and housing expenditures. They were allocated to income on the basis of patterns given by T. Barna, The Redistribution of Incomes, p. 207, and A. M. Cartter, The Redistribution of Income in Postwar Britain, p. 48.

^{6.} Redistribution due to company taxes and the impact of fiscally produced dividend restraint is not visible because it occurred prior to the accounting stage in variant (1).

F. W. Paish attributes the low surtax yield to a "very remarkable redistribution of personal incomes." ("The Real Incidence of Personal Taxation," *Lloyds Bank Rev.*, Jan., 1957, pp. 11-13.) However, it seems more realistic to link the low tax yield to fiscal policy which caused nondistribution.

a much more rapid leveling between 1938 and 1949 than do the pretax figures, indicating a step-up in fiscal redistribution. However, the impact of fiscal leveling had waned by 1955.

The Effect of the Erosion of the Tax Base. Variant (9) shows the result of imputing post-tax undistributed income in all three years and adding 300 million pounds to 1955 investment incomes. The 1949-55 interval shows a 4 per cent rise in inequality, and the over-all 1938-55

TABLE 5
Consumer Price Increases for Nine Income Groups
(Based on 1953 Expenditure Patterns)

WEEKLY INCOME	Percentage Price Increases in Alternative Periods				
of Household (£, 1953)	1938–46	1946-51	1951–56	1938–56	
Under 3. 3-6. 6-8. 8-10. 10-14. 14-20. 20-30. 30-50. 50 and over. All		30 33 33 33 33 32 31 31 30 32	25 23 22 21 22 20 19 18 14 20	142 150 156 157 161 158 160 158	

Sources: National Income Blue Book, 1956, pp. 22-23, and Ministry of Labour and National Service, Report of an Enquiry Into Household Expenditure in 1953-54, pp. 25-29. The commodity categories in the two sources were first reconciled as far as possible; the Blue Book price indexes for each commodity were then converted to a 1953 base and averaged, with 1953 expenditures being used as weights. Thus the figures given are measures of the change over time in the cost of the different 1953 "market baskets." This approach understates the full impact of subsidies, because some, such as health subsidies, take effect through provision of goods in kind rather than through price reductions. Of course, it is also subject to the well-known criticism of all index numbers based on fixed market baskets.

decline is more than halved. In sum, the official figures exaggerate the over-all leveling and hide a clear reversal of the trend after 1949.

Discriminatory Price Changes by Income Rank. Indirect taxes and subsidies also deserve attention as qualifications of the official picture. Subsidies have already been taken into account roughly, along with other social services in the previous discussion, but the effect of indirect taxes was ignored. Also, the full imputation of subsidies to consumers is questionable, since their incidence depends on demand and supply elasticities. Thus an alternative approach is suggested. Table 5 gives estimated price indexes based on 1953 "market baskets" for specified income groups. The price changes are measured for three periods which mark distinct episodes of historical interest. The 1938-46 comparison shows clearly the leveling impact of wartime subsidies which held down the cost of food; the higher the income group, the greater the wartime

increase in the cost of its market basket. Therefore the leveling of real personal incomes during the war was greater than that indicated for money incomes.

Between 1946 and 1951 price changes were virtually the same for each income rank. This indicates that fiscal policy in the Labour era held, but did not extend, those wartime gains of low income groups which came in the form of relatively favorable price changes. After the exit of Labour in 1951, the wartime trend was clearly reversed. Table 5 shows that the lower the income group the more unfavorable its price change between 1951 and 1956. The virtual completeness of this reversal of the wartime trend is established in the last column of the table by the near uniformity of price increases over the entire 1938-56 period.

The Unchanged Disadvantage of Large Families. One more misleading feature of the official figures should be mentioned. Up to this point, variation in family size has been ignored. Inland Revenue breakdowns show that for "tax families" of two or more persons the mean income for large families is about the same as for small families. This persistent relative disadvantage of large families—a major component of inequality—is concealed by emphasis on the tax family as the recipient unit. Transformation to an "equivalent adult" or per capita unit produces substantial and roughly equal increases in the inequality measure in each of the three years. Consequently, exclusion of this stable component of inequality exaggerates the relative decline in the concentration measure.

IV. Conclusion

In the discussion of pre-tax income distribution, an attempt was made to abstract from the impact of fiscal policy. The basic conclusion was that there is no convincing evidence of a "natural" leveling in Britain since 1938. The leveling of pre-tax personal incomes is exaggerated, and what did occur may be attributed to fiscal policy and the consequent erosion of the individual tax return. Thus little, if any, headway had been made against the roots of inequality, despite a definite moderation of the final outcome by fiscal policy.

When taxes and social service benefits were allowed for, the official distributions showed a substantial leveling of individual incomes after 1938, but this should be credited entirely to fiscal policy, and for many

¹⁵ Between 1946 and 1948, the yield from the tobacco tax rose from 5 to 6 per cent of personal income; after 1948 the yield was stable at just over 600 million pounds. Ironically, indirect taxation appears to have reached its peak during the Labour era. For example, the expenditure on alcoholic drink and tobacco reached its maximum of 19 per cent of total consumers' expenditure in 1948. The income tax structure became only slightly more progressive under the Labour government; so the health service appears to have been its outstanding redistributive innovation.

reasons it is less impressive than it may seem. In the first place, the equality trend is exaggerated, for reasons already given. Second, it is clear that this considerable fiscal redistribution was brought about primarily by the war emergency, stepped up only slightly during the Labour era, and has since been partially reversed. Thus the income "revolution" which did occur was a largely inadvertent or accidental by-product of the high taxes, subsidies, and dividend restraint required to finance the military budget without runaway inflation. Aside from the National Health Service, redistribution was not the outcome of the conscious equalitarian design of Labour fiscal policy, which appears to have done little more than hold its own.

This general conclusion receives independent support from postwar studies indicating that the "working class" pays for its own benefits in the British welfare state.16 To that extent, the redistribution has been horizontal, affecting primarily the consumption patterns within

TABLE 6 ESTIMATED TAXES PAID AND BENEFITS RECEIVED BY TWO INCOME GROUPS, 1938 AND 1949*

Year	Income Groups	(1) Direct and Indirect Taxes as Percentage of Income	(2) "Divisible Benefits" as Percentage of Income	(1)-(2) Percentage of Income Contributed to "Indivisible" Benefits
1938	Working class	19 30	16 2	3 28
1949	Working classOthers	30	27 11	3 44

^{*} The estimates are derived from Findley Weaver, "Taxation and Redistribution in the United Kingdom," Rev. of Econ. and Statis., Aug., 1950, pp. 201–13, Table 2. The "Working class" group refers roughly to incomes below the top fifth.

each income rank. This conclusion has been subjected to the reasonable criticism that it takes into account only transfers and social service grants and ignores the "indisivisible" benefits of civil and military expenditures.¹⁷ The point is that both working class and top income groups paid more than enough to finance their own "divisible" transfers and social services, as shown in Table 6. However, the top income group must be credited with paying out a greatly increased share of its own income to finance the expanded civil and military expenditures, while

¹⁶ The working class has usually been defined on an income criterion and refers roughly to incomes below the top fifth. See, for example, Findley Weaver, "Taxation and Redistribution in the United Kingdom," Rev. of Econ. and Statis., Aug., 1950, pp. 201-13; and Bertrand de Jouvenel, Ethics of Redistribution, pp. 90-91.

¹⁷ Alan T. Peacock and P. R. Browning, "The Social Services in Great Britain and the Redistribution of Income," in Income Redistribution and Social Policy (Alan T. Peacock, ed.), p. 159. The argument of these writers is that others have made a specious (or at least misleading) comparison of "the whole of what the working class pays into the government with a part of what it takes out—that part which we can measure."

the taxation of the working class over and above its allocable benefits was stable.

This suggests a tentative interpretation of the income revolution: Given the basic hypothesis of this paper that there was no "natural" leveling in Britain, the income revolution represented a draining of high incomes to meet the expanded fiscal needs of the war. This certainly may be called "vertical redistribution," even though it was not due primarily to equalitarian welfare spending. Yet the fact that the higher level of military spending was the main force behind it makes the leveling of personal incomes appear as a possibly transitory phenomenon with less social content than is usually supposed. Furthermore, the impermanence of the development has already become evident with the waning impact of fiscal redistribution after the Labour era.

As of now, little headway toward equality since the war can be credited to organized labor and its political allies, despite their considerable effort. A remark of Lewis Carroll's Red Queen sums up the picture well:

"Well in our country," said Alice, still panting a little, "you'd generally get to somewhere

else—if you ran fast for a long time as we have been doing!"

"A slow sort of country," said the Queen, "now here, you see, it takes all the running you can do, to keep in the same place."

¹⁸ John Strachey cites this dialogue in Contemporary Capitalism, p. 150, and suggests a plausible explanation.

PREDICTION AND CONSUMER BUYING INTENTIONS*

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It is now generally agreed among economists that expenditures by consumers are subject to wide fluctuations essentially unrelated to current disposable income. There is also considerable evidence that an important part of the variation in the consumption-income ratio is due to variation in purchases of consumer durables.¹ Hence the interest that attaches to predictions of durable good purchases by consumers and the attention given to consumer buying intentions, expectations, and attitudes.

The most extensive body of information in this area is obtained from personal interview surveys conducted by the Survey Research Center at Michigan for the Federal Reserve Board. Other consumer surveys have been obtained in recent years by the National Bureau of Economic Research (mail interviews), the National Industrial Conference Board (telephone interviews), and the Bureau of the Census. This report deals only with mail questionnaire data obtained from two surveys conducted by the NBER with a large "volunteer" panel of member-subscribers to Consumers Union (CU) of the United States—the producttesting-and-rating organization. The first of these surveys was taken in April, 1958; responding households were reinterviewed in October, 1958. The characteristics of the sample, the kind of biases that exist and the advantages and disadvantages of using data from a sample of this nature have been discussed elsewhere.² Briefly, the CU sample contains households with higher incomes, younger heads of household, more formal education, a higher incidence of home ownership, and a greater propensity to buy durable goods than the population as a whole. Some of these characteristics are desirable, given the problem, and some not. On the whole, I feel that an examination of differences in behavior among the households in this sample can serve to illuminate differences in behavior among households in the population that account for much of the volatility in purchases of durable goods.

The NBER study has two broad objectives. We are interested in de-

the preparation of statistical material.

1 For example, see Reports of Federal Reserve Consultant Committees on Economic Sta-

tistics (GPO, 1955).

^{*}This paper reports some preliminary results of a research project being conducted by the author at the NBER. Thanks are due Stanley Besen and George Stein for assistance in the preparation of statistical material.

²See my paper, The Predictive Value of Consumers Union Spending Intentions Data, Conference on the Quality and Economic Significance of Anticipation Data (NBER, Princeton, 1960).

termining the kind or kinds of questions about buying intentions that make the maximum net contribution to a model which describes consumer behavior. In addition, we want to find out by how much and in what manner the "forward looking" data (intentions, expectations, and attitudes) contribute to the explanation of durable goods purchases provided by demographic, financial, and historical information. This paper explores the implications of several simple hypotheses bearing on the relationship between intentions, purchases, and expectations, and presents some rather rough empirical tests of the hypotheses. We also attempt to construct a different hypothesis about the interrelationships among these variables, based on insights suggested by the empirical results. The status of the paper is therefore one of providing and exploring hypotheses which are to some extent independent of and to some extent suggested by the data.

Plan Fulfillment

The NBER-CU survey provides a unique opportunity to study the relationship to purchases of a variety of differently worded questions about buying intentions. Such a study requires very large sample sizes, since the vast majority of households neither plan to buy nor buy any specific durable commodity over time periods of interest to forecasters.³ Some 16,000 matched responses are available for analysis as a result of the two NBER-CU surveys. These households were split into five random subgroups, each being sent a differently worded question about intentions to buy. The objective is to determine which question about buying intentions makes the largest contribution to the prediction of variations in purchases over time.

Cross-section data on the fulfillment of buying intentions can be used to examine the forecasting value of buying intentions over time. Okun has shown that buying intentions have predictive value over time if we find, from cross-section data, that r, the fraction of intenders who buy, is larger than s, the fraction of non-intenders who buy, provided that both r and s are independent of p, the fraction of intenders in the population.4 The time series correlation between intentions and purchases turns out to be a function of the difference between r and s

Conference on the Quality and Economic Significance of Anticipations Data, ob. cit.

⁻³ The arithmetic of the sample size requirements for reinterview studies is impressive. Somewhere between 5 and 15 per cent of the population are apt to either plan to buy or purchase a typical durable—new automobile, refrigerator, etc.—over the period of, say, a year. If the sample size is 1,000 and the plan or purchase frequency 10 per cent, only 100 cases are available for analysis. Even fewer fulfilled plans will be available. It seems to me virtually impossible to study the role of buying intentions in decision making with sample of this size, although the attempt has been made with even fewer than this. For example, the data reported in Lansing and Withey, "Consumer Anticipations, Their Use in Forecasting Consumer Behavior," in Short-Term Economic Forecasting, Studies in Income and Wealth (NBER, 1955, Princeton), presents numerous tabulations based on what appears to be about fifty households who reported plans to buy and bought new cars.

1 See Arthur Okun, "The Value of Anticipations Data in Forecasting National Product,"

PURCHASES OF SELECTED COMMODITIES OVER THE SIX-MONTH PERIOD APRIL 1958-OCTOBER 1958
RELATED TO APRIL 1958 INTENTIONS TO BOX

Difference $r-s$, Intentions Question	E F	115.0 113.3 8.5 111.5 11.4 8.0 8.0 4.0 3.5 7.4 3.2 5.7 4.6
	A	26.8 28.2 24.1 24.1 17.8 4 17.8 13.4
NCE 7 S QU		·
FFERE	0	31.7 27.8 31.0 22.5 20.2 28.7 19.4
DI	В	232.2 28.7 28.7 31.2 26.8 26.8
	A	37.4 36.7 36.7 36.7 29.6 34.1 28.3
/HO	Ħ	14.2 7.2 7.2 1.5 14.9
DERS W	田	3.2 3.2 5.3 1.6 1.6 5.0 5.0
PER CENT OF NON-INTENDERS WHO BOUGHT S, INTENTIONS QUESTION	Ω	13.9 7.2 1.2 13.8 13.8 8.8
of Non Inten	၁	13.5 3.5 4.6 1.6 10.8 4.8
CENT	В	15.8 1.9 1.9 1.3 1.3 1.3 1.3
Per B(A	16.8 4.4 2.1 14.1 5.7
*2	Ħ	17.9 11.7 8.6 5.5 6.2 18.1 9.3
RS WHC	মে	28.8 16.5 16.8 9.6 7.7 20.2 10.7
TIONS C	Ω	40.7 31.9 29.0 23.3 20.6 34.7 19.2
Per Cent of Intenders Who ought 1, Intentions Question*	၁	45.2 31.3 35.6 24.1 23.1 39.5 24.2
ER CEN	щ	57.7 42.4 37.8 30.6 34.4 42.1 26.0
Bo	Ą	54.2 44.0 43.8 33.7 48.3 34.0
COMMODITY		Automobile 44.0 Washingrachine 43.8 Dishwasher 38.7 Clothes dryer 48.3 Furniture 48.3 Carpets and rugs 34.0

* The intentions questions were:

A "Definite" plans over 12 months.

B Plans within 6 months.
C Plans over 12 months (if income is as expected).
D Plans over 12 months.
E "Probable" or "possible" (but not definite) plans over 12 months.
F Plan "later" (than 6 months from now).
Sources: All data from Consumer Purchases Project, NBER.

and of the variance of p over time. It follows that observed magnitudes of both r and s are important data for the problem at hand. Table 1 shows the calculated magnitudes for these two statistics, and their difference, for six different buying intentions questions and a selected number of individual commodities.

The intentions questions shown as A through F are progressively less restrictive, using the percentage of intenders as the criterion of restrictiveness. That is, a smaller fraction of the sample reported intentions when asked the A question than B, when asked B than C, etc. It is quite evident that both r and s decline as the intention question is phrased less and less restrictively; r declines much faster and more systematically and the difference r-s follows the same pattern. But does it follow that short-range and more precise intentions questions would be better predictors of behavior? A little reflection suggests that we cannot tell from the evidence presented. The behavior of the data in Table 1 seems wholly dependent on the type of commodity and the length of the time period for which purchases are measured.

To see the source of this difficulty, let us suppose two extreme cases. As above, we are interested in using intentions data to help predict which households will purchase a specific commodity A over a designated period of time, say, six months. At one extreme, we phrase the intentions question in a very restrictive fashion; e.g., "Do you definitely intend to buy within the next month?" At the other extreme we phrase the question very broadly; e.g., "Do you think you might possibly buy within the next five years?" If A is a commodity purchased by 20 per cent of the population over the six-month period, we would probably find that: (1) for the narrow question, almost all intenders would buy, although very few people would report intentions and most purchases would be made by non-intenders; (2) for the broad question, almost all purchases would be by intenders, very few non-intenders would buy, and a great many nonpurchasers would report intentions. The results could be summarized in 2×2 contingency tables as follows:

Plans	I Narrow Question Purchases			Plans	II Broad Question Purchases		
	Yes	No	Total		Yes	No	Total
Yes No	5 15	1 79	6 94	Yes No	19 1	71 9	90 10
Total	20	80	100	Total	20	80	100

Measures of Relationship* I II (r-s) 0.67 0.11 C 0.37 0.08 λb 0.20 0.00

^{*} r - s is defined as above in the text.

Practically any measure of relationship would show a significant difference in the behavior of intenders and non-intenders for both questions. Further, the measures used all show that the narrow intentions question is more closely related to subsequent purchase behavior than the broader question. To obtain precisely the opposite results, i.e., to show that the broad question is better than the narrow one, all we need to do is examine the same kind of relationship for commodity B, assumed to be purchased by 80 per cent of the population instead of the 20 per cent who purchased A. The contingency tables would then be as follows:

Plan	III Narrow Question Purchases			Plans	IV Broad Question Purchases		
	Yes	No	Total		Yes	No	Total
Yes No	9 71	1 19	10 90	Yes No	79 1	15 5	94 6
Total	2 80 \$	20	100	Total	80	20	100
Meas	ures of Rel $(r-s)$ C λb		•	III 0.11 0.08 0.00	IV 0.67 0.37 0.20		

^{*} (r-s) is defined as above in the text.

C is called the contingency coefficient, used to measure the degree of association between classifications where the underlying data are assumed to be discontinuous. The value of C is determined by the magnitude of χ^2 , computed according to the usual procedures; C^2 can vary between 0 and ± 0.50 .

 λ_b is a measure of relationship suggested by Kruskal and Goodman (JASA, March, 1954). It consists essentially in a comparison between the probability of success in predicting the B class of an observation when knowing nothing about the population distribution of the A class, compared to the probability of success in predicting the B class of an observation with foreknowledge of the distribution of the A class, λ_b can vary from -1 to +1; a value of zero does not indicate a lack of statistical association between the A and B class of a group of observations.

The underlying generalization seems evident, given the two extreme cases. As the question is narrowed to the limit, r tends to approach unity and s tends to approach the per cent of purchasers in the population x. As the question is broadened to the limit, r tends to approach x and s tends to approach zero. Thus the r-s criteria will approach 1-x for the narrow question and x for the broad question; which is larger depends

entirely on the value of x. It follows that if the commodity in question is bought by less than half the population during the time period under consideration, a narrowly defined question about intentions will tend to show a closer relationship between intention and action than a broadly defined one, and vice versa. The same tendency, though not quite so extreme, shows up if we use other measures of relationship.

This result occurs because we have neglected to include other variables that have an effect on purchases, and these variables are forced to work via buying intentions. To see this, consider the reason why we get a positive relationship for the very broad question. Some fraction of the population simply has no current interest in purchasing the item in question, because of age, family situation, income, stock of durables, tastes, or other reasons. If we make the question broad enough, everyone except these households reports an intention to buy. Hardly any of the people who are uninterested buy the item; some of the others do. If we related intentions to purchases and excluded the uninterested group, we would not expect to find any relationship with a meaninglessly vague question and we probably would not find one. On the other extreme, we ask a very narrow question and we elicit yes responses from people who have already made preliminary arrangements to buy, or whose income, asset, durable goods stock position, or needs are so favorable that the purchase is assured, or whose existing durable has just broken down, etc. In neither case does it appear that we have made a net contribution to the explanation of purchases, given the influence of the variables discussed above. Yet empirical data not only will show that intentions reported in response to these extreme questions are positively related to subsequent purchases but will also indicate that one question or the other is much more strongly related.5

It is not clear to what extent this kind of essentially spurious relationship influences the results shown in Table 1. The fact that all commodities listed were purchased by substantially less than half the sample could presumably explain all the observed differences in the r-s measure of relationship. There seems to be no solution short of extensive multivariate analysis which would enable us to account for the influence of factors directly relevant to purchase decisions. Even so, there is no guarantee of definitive results; for one thing, we have not succeeded in measuring all relevant variables. For another, the degree of intercorrelation among these variables is probably sufficient to cast doubt on a measure of relative importance obtained in this manner.

⁵ Our conclusion here does not mean that the formal requirements for predictive value developed by Okun, i.e., that r exceed s, is incorrect. His conclusions rest on two assumptions: (1) that r and s must be independent of p, and (2) that there be some variation in p over time. In both extreme cases posited it can be shown that either one or the other of these assumptions must necessarily fail to be realized.

More will be said about this problem later but the preliminary investigation must be considered inconclusive.

Income Surprise and Plan Fulfillment

The problem we focus on here is the interrelationship between buying intentions, purchases, and income expectations. The successful use of intentions data in forecasting models depends largely on how well we can predict circumstances that will lead to systematic departures from intended actions. It seems clear from previous investigationsand confirmed by the NBER investigation with CU data—that most buying intentions are not carried out within any reasonably short period of time after the intention has been reported, and that most purchases during such a period are made by households who did not report intentions. If these departures from plan are completely random with respect to the aggregate of households, we would find close agreement between plans and purchases in the aggregate despite the widespread lack of agreement at the micro level. Even if departures from plan are not entirely random, successful prediction would still be possible, provided we know the reason for variation and its direction and extent, either as an absolute magnitude or as it relates to specified future developments.

One could think of many reasons why households would depart systematically from their reported intentions. An obvious one is that intentions may simply be one among many indicators of optimism, and households reporting both a high level of buying intentions and optimistic responses to other attitudinal questions may buy more than households reporting the former but not the latter. Another is that households may be either agreeably or disagreeably surprised with respect to events that they anticipate will happen. If the former, they will tend to buy more relative to intentions, and vice versa.

Two alternative hypotheses have been advanced as to the way in which intentions, purchases, and other expectational or attitudinal variables relate to each other. The first argues that both intentions and expectations are essentially attitudes with a time dimension attached. Under this interpretation both these variables are measures of the respondent's cast of mind at the time of interview. The more intentions reported, the more optimistic are expectations, or the more favorable are attitudes, the greater the over-all degree of optimism and the more likely the respondent to spend money. Let us call this the "additivity" hypothesis.

^e See Katona and Mueller, Consumer Attitudes and Demand, 1950-1952, pp. 51-61, and Consumer Expectations, 1953-56, p. 10. Also Katona, "Business Expectations in the Framework of Psychological Economics," in Expectations, Uncertainty and Business Behavior, ed. M. J. Bowman (SSRC, 1958).

The second hypothesis argues that forward-looking variables like intentions and expectations are fundamentally different from attitudes, in that they express subjective judgments, held with more or less certainty, about future events. Intentions express judgments about what the household expects to do provided its expectations (judgments about what others will do to it) turn out to be correct. Attitudes or opinions are a different kind of variable and have their major role in determining the way in which households formulate intentions and expectations. Let us call this the contingent action hypothesis.

It makes a substantial difference to the choice of questions to include on surveys and to the interpretation of survey results whether the additivity or contingent action hypothesis is more descriptive of behavior. For example, the former would lead to the conclusion that an increase in optimism due to more favorable expectations would result in more purchases, given intentions and other indicators. The latter would lead to the opposite conclusion, since more optimistic initial expectations would be associated with less agreeable income surprises, on the average, and hence fewer purchases.

It is relatively simple to set up an empirical test that discriminates between these two hypotheses. Either would predict that intentions and actual income change would be positively related to purchases, although they might differ in their predictions about the quantitative effect of intentions.

But the predicted effect of income expectations, holding intentions and income change constant, would be different in direction for the two hypotheses. The additivity hypothesis argues that optimistic income expectations would produce a higher level of purchases than pessimistic expectations. The over-all degree of optimism shown by any level of intentions and actual income change should be enhanced by optimistic income expectations; hence purchases should be greater. The contingent action hypothesis, on the other hand, would predict a negative relationship between income expectations and purchases. The more optimistic are expectations, holding intentions and income change constant, the more unpleasant the degree of surprise for the household with respect to income developments, and vice versa. The more unpleasant the degree of income surprise, the lower the level of purchases relative to intentions. Other implications of the two hypotheses are suggested below.

Empirical Analysis

For the empirical analysis we cross-classified the sample into twenty-

⁷ A good summary of these two viewpoints and the implications of both for the prediction problem are presented by Arthur Okun in Anticipations Conference, op. cit. See also Juster, Consumer Expectations, Plans and Purchases, Occasional Paper 70(NBER, 1959), especially Section I.

five cells, consisting of all combinations of April, 1958, income expectations and actual change in income between April and October, 1958. Average levels of purchases from April to October, 1958, and buying intentions in April were computed for each cell, as well as ratios of purchases to plans. Where cell sizes were quite small, we combined adjacent cells. Unweighted regressions were then computed on the cell averages, using the following equation forms

1.0
$$P = a + bE + cY_e + dY_a + u$$
1.1
$$P/E = a + bY_e + cY_a + u$$

where

P=weighted number of durable goods purchases between April, 1958, and October, 1958, scaled from 0 to 18.

E=purchase intentions in April, 1958, scaled the same as P.

Y_e=expected change in income as of April, 1958, scaled from 5 (large increase) to 1 (large decrease).

 Y_a = actual change in income between April, 1958, and October, 1958, scaled the same as Y_a .

Regression coefficients (standards errors) are shown in Part A of Table 2 for three different measures of buying intentions obtained from responses to differently worded questions.

The results are rather interesting, although inconclusive because of the relatively small number of cell averages. In equations where intentions are introduced explicitly (1.0), none of the income variables shows significant coefficients (at the 5 per cent level) and three out of four are smaller than their standard errors.⁸ All show positive signs and to this degree support the additivity hypothesis. But when we use purchase-plan ratios as the dependent variable a stronger and more consistent pattern emerges along the lines predicted by the contingent action hypothesis. In the three (1.1) equations shown, income expectations have negative regression coefficients in all cases (one significant and the other two larger than standard errors); income change shows three positive coefficients, all significant at the 5 per cent level.

The results of equation 1.1 are not necessarily inconsistent with the additivity hypothesis. Use of purchase-plan ratios tests for the effect of

⁸ Even the intentions variable fails to show a significant regression coefficient in one of the equations, although it is quite evident from other data that intentions are very strongly related to purchases. This result points up the difficulty in using cell averages for intentions and purchases, since the average consists of a large number of zeros and a smaller group of positive numbers ranging from one to eighteen. Averages for the six-month plan question are especially variable because there were relatively more zeros in response to this question. Sampling errors are consequently larger here than for the averages for the twelvementh plan question.

TABLE 2

Regression Analyses of Relationship Between Purchases of Durable Goods,
Buying Intentions, Income Expectations, and Actual Income Change

Group	NUMBER OF CELLS	Equation Form	Net Regression Coefficient (Standard Eirors)				
DESCRIPTION			E	Y_c	Y_a	R^2	
Part A Plans within 6 months	21	1.0	+.185 (±.213)	017 (±.076)	+.121 (±.078)	.118	
Plans over 12 months	23	1.0	+.241 (±.106)	+.053 (±.055)	+.034 (±.046)	.396	
Plans within 6 months	21	1.1		116 (+.096)	+.186 (+.096)	.185	
Plans over 12 months	23	1.1		044 (±.030)	.059 (±.030)	.205	
"Definite" plans over 12 months	16	1.1		126 (±.055)	+.266 (±.061)	.600	
Part B Zero buying intentions within 6 months	18			+.067 (±.075)	+.045 (±.080)	.099	
within 12 months	19			033 (±.038)	052 (±.042)	.187	
"definitely" within 12 months	19			+.085 (±.053)	+.146 (±.053)	.552	
One buying intention within 6 months	16			249 (±.133)	+.410 (±.148)	.385	
within 12 months	18			+.054 (±.074)	029 (±.074)	.037	
definitely within 12 months				n.a.	n.a.	n.a.	

Sources: All data from Consumer Purchases Project, NBER.

the independent variables in explaining variations from proportionality. But there is nothing in the additivity hypothesis which suggests that purchases should vary proportionally with intentions, and the results of equation 1.0 do not indicate that the effect of expectations, holding intentions and income change constant, is negative. The results so far seem to offer somewhat more support to the contingent action hypothesis but do not reject the alternative.

A further difficulty arises when we consider the interpretation of results that seem favorable to the contingent action hypothesis. Suppose

•

we have three kinds of people in our sample: perennial optimists (dreamers), perennial pessimists (conservatives), and the rest of the sample. Dreamers are the sort of people who report income expectations on the assumption that everything will break well, and report buying intentions contingent on these same rosy prospects. Conservatives are the sort of people who never count an egg until it is hatched and eaten; they report income expectations on the assumption that everything that can go wrong will do so; and report only those buying intentions that will be carried out even if everything turns out for the worst. If such is the case, empirical tests will show results consistent with the contingent action hypothesis even if the rest of the sample behaves in a completely random manner. Dreamers will, on the average, show up as households with both unpleasant income surprises and relatively low purchase-plan ratios; conservatives, on the average, will show up as households with both pleasant income surprises and relatively high ratios of purchases to plans.9

However, it is not likely that a household would be a dreamer with regard to income prospects and a conservative with regard to reported intentions, or vice versa. If not, stratification of the sample by number of buying intentions would eliminate either one or the other source of bias. Part B of Table 2 shows the results of regression analysis relating purchases to the income expectation and income change variables for households with buying intentions of either zero or one (the "one" cannot be an automobile buying intention). The variables are defined as above.

The data seem rather chaotic.¹⁰ Of the two equations which have the most significant coefficients, one (for the group with zero "definite" plans) supports the additivity hypothesis and the other (for the group with one plan within six months) supports the contingent action hypothesis.

These results, together with a re-examination of the aggregate data discussed earlier, suggest another explanation for both the diffuse behavior of the data, where households were stratified by level of intentions (Part B of Table 2), and the failure of any systematic pattern to appear in aggregate data when intentions were treated as an explicit

⁰ The possibility of this kind of "personality bias" was suggested to me by Albert Hart. ¹⁰ It cannot be argued, however, that the data demonstrate that personality bias was a major factor in the evidence from aggregate data that supported the contingent action hypothesis. These data eliminate the dreamers and retain the conservatives and the rest of the sample. If personality bias had been a major factor in the aggregate results, we should expect that the unpleasant surprise cells would fail to show the expected relatively low purchases, but the pleasant surprise cells would continue to show relatively high purchases. Examination of the relevant cells shows no evidence of such dichotomous behavior. The failure of these equations to show the expected signs cannot be accounted for by personality biases alone.

independent variable rather than as the denominator of the purchaseplan ratio dependent variable (Part A of Table 2, equation 1.0).

First consider the former. We find statistically significant regression coefficients (or close to it) for two equations. Analysis of households reporting one buying intention within six months yields a negative coefficient for income expectations and a positive one for income change; for households reporting zero definite intentions over twelve months we find positive coefficients for both of the income variables. The former is consistent with the contingent action hypothesis; the latter with the additivity hypothesis. One explanation of the result for the zero definite intentions group is that income expectations represent a proxy for the "real" level of buying intentions when reported intentions are zero. Households reporting any given level of buying intentions are obviously not homogeneous with respect to the likelihood of their purchasing; i.e., their real intentions. This would be especially true for the zero intenders, who range all the way from households who are simply uninterested in buying durables to households who are sufficiently uncertain about purchase prospects so that they report no intentions to buy.

If this explanation is adopted, expectations about income serve a dual role in the analysis of purchase decisions. On the one hand they help to determine income surprise, and hence affect the relationship between intentions and purchases. But they also provide clues to the real level of intentions for households at any given level of reported intentions. If households are more heterogeneous with respect to their real intentions when reported intentions are zero than when they are non-zero, one would anticipate that the "income surprise role" of expectations would dominate the regressions for the intenders but that the "measurement of real intentions" role would dominate for the non-intenders. If so, we would find that income expectations have a negative effect on purchases for intenders, holding income change and intentions constant, but a positive effect on purchases for non-intenders.

Regarding the aggregate data, consider the form of the two equations used. We found negative coefficients for Y_a and positive ones for Y_a when purchase-plan ratios were the dependent variable.

1.1
$$P/E = a - bY_e + cY_a + u$$

But when intentions were an independent variable, we found positive (but unreliable) coefficients for both Y_e and Y_a .

$$1.0 \quad P = a + bE + cY_e + dY_a + u$$

We can rewrite 1.1 as

1.2
$$P = aE - bY_eE + cY_aE + u'$$

Thus 1.1 explains purchases as a function of intentions plus the

joint (interaction) effects of intentions and the two income variables. The separate (additive) effects of the income variables are suppressed, as is the constant. Equation 1.0, on the other hand, suppresses interaction between intentions and the income variables, explaining purchases by intentions plus additive effects.¹¹

This pattern of results is entirely consistent with the hypothesis outlined above. If expectations effect purchases in different directions for intenders and non-intenders, it would follow that an equation like 1.0, which averages the effect for both groups, would show little net effect. An equation like 1.1, on the other hand, would show that high levels of intentions (with relatively few non-intenders) result in a strong negative relationship between expectations and purchases, while low levels of intentions (with relatively many non-intenders) result in a weaker negative effect. If we fit an equation with both additive and interaction effects, we would anticipate that the additive term for income expectations would be positive but the interaction term for intentions and expectations would be negative.

An attempt was made to fit such an equation to the data. The results were inconclusive because the number of observations relative to the number of variables was so small. For the equation where the coefficients looked at all reasonable, the following results were obtained (twelve-month plan question).

1.3
$$P = -.65 + .97E + .22Y_e - .12Y_eE + .07Y_a + .00Y_aE + .01Y_aY_e + u$$

These regression coefficients cannot be taken too seriously, given the small number of degrees of freedom that remain, but they are nevertheless suggestive. Equation 1.3 indicates that when buying intentions are relatively low (below about 1.8 plans for the regression coefficients shown) optimistic income expectations result in more purchases; the reverse is true for levels of intentions above 1.8.

As a minimum, the data seem to show that interaction with buying intentions cannot be neglected when the effects of income expectations on purchases are under investigation. A little reflection suggests that such interaction may well be a pervasive phenomena for the analysis of purchase decisions.

Let us assume, for the sake of argument, that the contingent action view of consumer behavior is essentially correct. What sort of relationship would be anticipated between variables like income, age, stock of durable goods, assets, debts, etc., and buying intentions and purchases of durable goods? All households are obviously aware of their financial and demographic situation. If they report buying intentions, it must be with some recognition of their respective situations. If so, one would

¹¹ I am indebted to Gary Becker for this point.

anticipate that situational variables like income, assets, age, etc., should have a different relationship to purchases for intenders than for non-intenders. The former have provided us with a measure of the way in which their individual situations affect the prospect of making purchases; the latter have also, to some degree, but the heterogeneity of the group of households who report zero intentions should mean that purchase prospects vary considerably among members of the group.

For the intenders, therefore, we would expect to find that the fulfillment of intentions is substantially unrelated to income, assets, age, etc. We would not expect this to be the case for non-intenders.

If this argument is correct, it is clearly essential to treat interaction between buying intentions and most other variables in multivariate analysis of purchases, or to analyze the behavior of intenders and non-intenders in different equations. If such is not done, we can anticipate that the measured effects of variables like income, age, assets, etc., i.e., the situational variables, will cloud the real effects, since it will be the average of a strong relationship for non-intenders and a weak or zero relationship for intenders. The measured effect of variables like income expectations will tend to approach zero, since it will be the average of a positive relationship for non-intenders and a negative relationship for intenders.

Further, the existence of interaction constitutes a further test of the additivity and contingent action hypotheses. If buying intentions are nothing but one of many contributors to consumer optimism there seems no reason to suppose that the actions of intenders and non-intenders would be different in respect to relationship between purchases and variables like income, assets, debts, and so forth. Intenders would certainly buy more than non-intenders, but none of the other differences in behavior suggested by interaction effects would be present.

Further, it seems plausible that the strength of the interaction effect would be dependent on the kind of buying intentions question asked. If restrictive questions are asked (plans within six months), the difference between the behavior of intenders and non-intenders may be more pronounced than when broader questions are asked (plans over twelve months or so). In effect, respondents who report intentions when asked a restrictive question may be more apt to fulfill at the same rate regardless of income, age, etc. When the intentions question is phrased rather vaguely, there should be less homogeneity among intenders regarding their real level of intentions, and consequently less difference between the behavior of intenders and the obviously heterogeneous zero intenders. It is to be hoped that the electronic computer program that will analyze the NBER-CU data will provide evidence on these and other questions.

DISCUSSION

Marc Nerlove: However much we may agree or disagree with Professor Friedman's permanent income hypothesis, the papers just presented are a tribute to its widespread and stimulating influence in research on the topics of this session. In four out of five of the papers, the impact of the hypothesis can be discerned. The papers by Messrs. Zellner and Jones are tests of one or more aspects of the hypothesis. Mr. Mincer relies heavily on the hypothesis, and indeed finds an unexpected application. Mr. Juster is not explicitly concerned with it, but, as I hope to show, it can be useful in the interpretation of his results. Only Mr. Brittain's paper is unrelated, but not therefore the less valuable.

Brittain's careful analysis of the supposed leveling of the income distribution in Great Britain appears to me to be a model of what good empirical research should be. We are often far too uncritical of the basic data which we employ, and, at least as Brittain shows in this one area, prone thereby to draw erroneous conclusions. Beyond this, however, I do not feel familiar enough with the British data and circumstances to comment further.

Zellner and Jones are both critical of basic aspects of the permanent income hypothesis: Zellner of the proposition that the average propensity to consume out of permanent income is unrelated to the level of permanent income, and Jones of the proposition that the marginal propensity to consume out of transitory income is zero.

Zellner adduces a theoretical argument, based on a minimum subsistence level, to show the falsity of the independence proposition. However relevant such an argument may be for underdeveloped nations, it does not seem very convincing applied to the American experience. Perhaps this is the reason for his very inconclusive empirical results, which tend rather more to support the permanent income hypothesis than to reject it. It seems more likely, however, that the peculiarities of 1950 in respect to the purchases of durables may be causing the trouble. In any case, this supposition would account for the fact that so many of Zellner's average propensities to consume are greater than one (Zellner, Table 1).

Jones's test of the proposition that the marginal propensity to consume out of transitory income is zero, appears to be more successful. Building on a previous investigation by Bodkin, Jones shows that the marginal propensities to spend out of the 1950 National Service Life Insurance dividend on individual categories of consumption, as well as on consumption as a whole, are higher than those predicted by the permanent income hypothesis. The pattern of the discrepancies for three components of consumption—food, housing, and clothing—may be explicable on the assumption that the economic horizons, to which the concept of permanent income refers, differ from one category to another. There are grounds for supposing this horizon is much shorter for food than for clothing or housing; however, this implies that the coefficient of the

windfall variable should be closer to the coefficient for measured income in the food category than it is in the housing or clothing categories, because both the windfall and measured income are closer in the former case to the relevant concept of permanent income than they are in the latter. Jones's results contradict this implication.

There is, of course, a far simpler explanation which appears to have gone out of fashion nowadays; that is, that there is a difference between the long-and short-run income elasticities of demand, which may be due to habit or to other frictions in consumer behavior. On this hypothesis we might expect a windfall to be spent predominantly in those directions in which an increase in spending was easiest. Increased expenditures on food through the purchase of better quality is surely one of the easiest ways a consumer unit can expend a windfall. A comparison between the results for clothing and housing, however, does not yield as reasonable results. I believe that the problem may be due to the mix of owners and renters, for when these categories are separated the comparison yields more plausible results (see Jones, Table 5).

Rather than an alternative to the permanent income hypothesis, the "persistence" hypothesis, as it might be called, may be a useful supplement to it. I suspect that it may be considerably more important in the investigation of consumption patterns than it is in the study of consumption expenditures as a whole.

Mincer's paper reveals what to me at least was an unsuspected application of the permanent income hypothesis, and shows the power of the hypothesis in organizing thoughts about matters other than consumption. However, Mincer's principal contribution lies in his convincing demonstration that consumption behavior, the composition of family income, and labor supply are three closely related problems. Rather than criticize his general conclusions or specific results, I shall attempt to extend his ideas a bit.

Paradoxes abound in economics. One of the more familiar of these is that the labor force propensity of married women varies inversely with measured income in cross-sectional data; but, over time, female labor force participation has markedly increased, despite a secular rise in income.

Suppose, as Mincer suggests, that the labor force propensity of married women is inversely related to the transitory component in the chief earner's income, but that it is unrelated to his permanent income. The last is of somewhat dubious character, but it makes the argument simpler. Under these assumptions it can be shown that the slope of the observed relation between labor force propensity and measured income is the product of two factors: the per cent of the total variance of measured income contributed by the transitory component; and the slope of the relation between labor force propensity and the transitory component of income. In a cross-section, the percentage of the variance of measured income contributed by the transitory component is certainly significant; hence, the negative relation between the labor force propensity of married females and measured income which has been found. On the other hand, over long periods of time almost all the variation in measured income is attributable to the permanent component. Thus, over time, various factors such as better employment opportunities, smaller family size, a chang-

ing age distribution of the population, and the like, could account for increased participation of women, the secular increase in income having no negative effect.

By the same token, these assumptions suggest that we should find a connection between female labor force participation and the relation of consumption to income, because the female labor force propensity is related to the transitory component in measured income. If the labor force propensity bears the same relation to the transitory component for two groups, then the ratio of the slopes of the relation between labor force propensity and measured income should be the ratio of the proportion of variance of measured income contributed by the transitory component, provided, of course, that labor force propensity is unrelated to permanent income. Because the permanent and transitory components are uncorrelated, the proportion of variance contributed by the transitory component is just one minus the variance contributed by the permanent component. But according to the permanent income hypothesis, the latter is measured by the elasticity of consumption with respect to measured income. We thus can obtain two independent measures of the same ratio. If the two do not correspond, we may have a basis for judging the differential effects of transitory income on the labor force propensities of women in the two groups. Needless to say, the foregoing remarks constitute only a suggestion. In practice, one would have to account for the offsetting effects of the income contributions made by married female members of the labor force to family income and the possibility of a connection between permanent income and female participation in the labor force. The supplementary value of this approach to the one Mincer has explored should be clear. In addition, unsatisfactory or inconsistent results obtained in this direction might suggest modifications in the permanent income hypothesis itself.

Turning now to Juster's report on his preliminary findings based on an exploratory investigation of the National Bureau-Consumer's Union Survey, I cannot resist the comment that this is one of the most exciting bodies of data on consumers to have appeared in quite a while. Juster has stressed the contributions that can be made to survey technique as well as implications for the relation among expectations, intentions, and actual behavior. I shall comment on the latter.

According to one of the hypotheses with which Juster is concerned, expectations are forecasts and intentions are plans conditional on the accuracy of the forecasts. Juster's data reveal both the extent to which plans were fulfilled and the degree to which expectations were realized. Albert Hart has called the difference between actual income and expected income the "degree of income surprise." While income surprise cannot in a strict sense be interpreted as transitory income (because transitory changes may be anticipated and permanent ones not), it is suggestive to think of income surprises as being of a predominantly transitory character. Juster's analyses relate to purchases of durable goods. The permanent income hypothesis suggests that transitory changes in income primarily affect the assets of consumers and not their consumption of nondurables, pace Jones! Thus, to the extent that income surprises are of a transitory character, we would expect that spending units with

positive surprises and no intentions to purchase will frequently do so, whereas consumer units with negative surprises and intentions to purchase may not fulfill their plans.

From one point of view, then, it is the interaction of plans and income surprise which determines purchases of durable goods and other asset additions or depletions. Unfortunately, Juster has not worked with the difference between expected income change and actual income change, which changes being on a common base would measure the degree of income surprise, although I understand he intends to do so. While not entirely appropriate to the purpose, the results which Juster has presented can be used for a simpleminded test of the "income surprise" hypothesis just stated. The ratio of actual purchases to intentions, for those who express intentions to buy, is a rough measure of the degree to which plans are fulfilled or overfulfilled. I have some qualms about the nature of the data—both purchases of durables and plans are in terms of numbers of items—but there is nothing one can do about this except to exclude automobiles or give them several units weight as Juster has done. At any rate, we should expect to find that the coefficients of expected and actual changes in income are of roughly the same order of magnitude but opposite in sign for those regressions which have the degree of plan fulfillment as the dependent variable. This is in fact the case for the regressions based on data referring to six- and twelve-month plans when a very definite statement of intentions was not required.

When a more definite statement of plans is asked for, the signs of the coefficients are correct, but the coefficient of the expected change appears to be on the low side in absolute value. This last might be accounted for on the following hypothesis: In the questionnaires for the survey which I have seen, the income expectations question precedes the question on intentions. It is therefore plausible that the income expectations question was answered independently of the intentions question. On the other hand when a very definite question about intentions is asked, the respondent may tend to base his answer on a more conservative estimate of the future. If this estimate is some fraction of the reported expectations, the degree to which plans are fulfilled will tend to be higher relative to reported expectations, and the coefficient of reported expectations lower in absolute value in a regression containing actual and expected income changes as separate variables.

The results for households reporting zero intentions do not, unfortunately, accord with the income surprise hypothesis. The latter, if correct, would suggest the same pattern of signs and magnitudes for the regressions in which actual purchases are dependent and zero intentions were reported, as in the previous case. In every case, however, the two variables had the same sign, although in no case was the coefficient of the expected change variable significantly different from zero.

Of course, these findings are preliminary and based on averages of grouped data. More clear-cut findings will doubtless be forthcoming upon more detailed analysis. In view of the fact that just such an analysis is contemplated, it would perhaps be appropriate to offer a number of suggestions. First, if one really takes the income surprise hypothesis seriously, it would be better to in-

clude expected and actual changes in income in the form of a difference rather than as separate variables. From a statistical point of view to do so would also sharpen the results, because the estimates would be statistically more efficient and would tend to have smaller standard errors. If, in fact, the income surprise hypothesis is correct, Juster's standard errors are biased in the upward direction, although his estimates of the coefficients are not biased on that account. A second suggestion concerns the wealth of additional material to be found in the questionnaires. These include a number of questions on households' assets and debts. If it is true that purchases of durable goods are in part a form of savings, then it follows that such purchases cannot be treated independently of other forms of asset formation or dissipation. The choices involved are clearly interdependent and a statistical analysis should recognize the connection.

Looking over the field of current research on income and consumption as revealed in these papers, one cannot fail to be impressed with the influence of the permanent income hypothesis. It should be remembered, however, that it is basically a very simple hypothesis and consumer behavior, which it seeks to explain, is complex indeed. There are likely to be modifications and extensions as it is applied. Family size and composition as well as the composition of family income are important factors in consumer behavior. So is habit persistence. Assets, which are relatively neglected in Friedman's theory, are clearly highly relevant. How useful the permanent income hypothesis will prove to be will depend both on our ingenuity in building upon the basic structure and the inherent strengths of the basic structure itself.

RESEARCH ON ECONOMIC DEVELOPMENT

TURNING PARAMETERS INTO VARIABLES IN THE THEORY OF ECONOMIC GROWTH

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Ι

It is not new or original for economists today to recognize the influence of noneconomic factors on behavior. Economists have long done this, to account for economic behavior which cannot be explained in terms of economic theory. Autarky is economically irrational, but it must be dealt with in foreign trade theory. A company executive may be motivated not so much by the desire to maximize profits as by a drive to increase his company's share of the industry's market. In industrial relations the noneconomic factors are especially important.

These noneconomic motivations in general are not analyzed by economists. Rather, since they can be assumed to remain constant they are treated as parameters, are explained on an *ad hoc* basis or not at all, and then further analysis is in terms of economic theory. This procedure is more or less adequate in many areas. But when one turns to the problem of explaining why and how a society with stationary or virtually stationary technology makes the transition to continuing technological progress, this procedure becomes inadequate. Noneconomic factors must enter fully into the theoretical system as variables, with causal relationships flowing to as well as from them.

In a brief talk I can hardly demonstrate this in general, but two empirical observations will at least raise the question sharply.

As among Indonesia, India, China, and Japan, during the past four hundred years the country with the greatest degree of contact with the developing West was Indonesia, where the Dutch were securely ensconced for three hundred years. The one with the next most contact was India, under the English; and the third, China, where many trading and other enclaves along the coast brought considerable contact. Japan clearly had the least contact of all. Further, of the four the country with the poorest resource availability was Japan. Yet of the four, Japan began economic growth first and has made by far the most progress; among the others China is most clearly on the road of continuing technological progress and rising income; India has now probably begun the process; and Indonesia is at the end of the procession. This is precisely

the reverse order of the degree of opportunity for contact with advanced techniques. These are important cases; it is utterly impossible to explain the relationships among them on economic grounds.

As more direct evidence of the importance of noneconomic factors, in traditional societies manual labor, dirty work, work with tools, and in general attention to the physical world, is the role of menials and peasants. More elite groups, therefore, find associating with work with the hands, with tools, with machines, or with the physical world grubby and distasteful. All this is unconscious. Many leaders who want economic development do not direct industrial projects effectively, because of these unconscious attitudes. Until a reversal of these values occurs in many individuals, economic development is not apt to occur. And a reversal of these values does not readily occur merely because the demeaning activities may increase one's income. The forces which change the attitudes are noneconomic ones. A theory of economic growth which does not go outside of economics to explain changes in these attitudes is not apt to be a good guide to what actually goes on in the world.

To these bits of evidence of the importance of noneconomic forces, let me add that the purely economic theories of why technological progress does or does not occur do not seem to stand up empirically. For example, saving is low in most technologically static societies. It is asserted that this is because income is too low to permit saving, and hence that a vicious circle is created. But as we get more income data about low-income countries we find that even at incomes of \$50 or \$100 per capita, they can save, and adequately to achieve economic progress, if they are sufficiently motivated to do so. A second example suggests that because low-income markets are so small, there is no inducement to invest. But while there is no inducement to establish an aluminum refinery or a light bulb factory, even in very small low-income countries there are markets for textiles, milled rice or flour, sugar, sandals, and many other everyday items which demonstrably are ample in size to justify investment in improved methods of producing these. And so on for other purely economic theories. They seem to be analytical models which empirically are of minor rather than major importance.

II

A number of economists who are students of economic growth make generous reference to the importance of noneconomic factors. Kaldor quoted in Leibenstein [6, page 112], Leibenstein [6], Rostow [14, 15], Lewis [8], Nurkse [13], at least three of the speakers on this program —Eckaus (in conversation), Hirschman [4], and Mason [11, 12]—and virtually all of the writers of texts on economic development are examples. But many of these treat these factors much as Mark Twain

accused everyone of treating the weather. Having mentioned non-economic factors, they then proceed to ignore them and discuss development as though only economic factors bring it about. The others (including present company) in essence say, "Change in noneconomic factors must be taken into account, but I don't know what causes it." Hoselitz has written extensively concerning the influence of sociological factors, and apparently has systematized this discussion in a book whose publication is listed for the month [5], but since I have not yet seen his book I cannot say whether it is an exception to this statement.

Among noneconomists, the anthropologists Godfrey and Monica Wilson, in their little book, The Analysis of Social Change [16], present interesting analytical suggestions concerning the effects of expansion in the scale of a primitive society on economic and political behavior. The social psychologist, Daniel Lerner, has developed an interesting and not unrelated theory of the interrelationships between the flow of communication within a society and economic and political change [7]. Another anthropologist, Eric Wolf, has sketched two types of village systems which he sees in Central America: one a closed corporate village impervious to economic change by virtue of certain aspects of its social structure; the other open to growth [17]. Edward and Laura Banfield [1] have presented a fascinating hypothesis of how the culture of an Italian village prevents it from developing. The psychologist, David C. McClelland, has related child training to a type of personality which enjoys solving problems rather than avoiding them [9], and has attempted to demonstrate that presence or absence of such personality is a dominant factor in economic growth [10]. The Freudian psychologists give us clues concerning the development of personality conducive to creativity and innovation more far-reaching and complex than the hypothesis of McClelland.

III

Isolated pieces of analysis such as these are building blocks. But we need more than separate building blocks. For reasons I have suggested above and will mention further below, to explain such matters as why Japan developed first among the four major Asian countries or how new values appear in a traditional society, we need an analytical model which is an interdisciplinary general system, encompassing all aspects of the behavior of a society, not merely its economic behavior.

Fifty years ago the idea of constructing such a system would have been ludicrously pretentious—although Pareto did so and not without some degree of success. But during recent decades "hard" theory has advanced rapidly in psychology, sociology, and anthropology. The suggestions arising out of these disciplines about human behavior are much

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more penetrating than they were a few decades ago. But workers in these disciplines have all been so busy advancing theory in their own field that they have not yet had the time or interest to reach out toward each other to develop an interdisciplinary theory of any sort, much less an interdisciplinary theory of the type of social change economists are interested in; namely, a theory of how economic growth begins in an erstwhile traditional society.¹ Since their various pieces of theories do not relate to this problem, it is necessary to take theories formulated in some other context and beat them until they yield some insight about economic growth—and further to fill in great gaps between them speculatively, and then probe to see whether the speculations are consistent with whatever firm or infirm more or less relevant theory can be found in each field.

Ideally, perhaps one should have a team of workers, one from each field, for this job. But a remark by Hanns Sachs is comforting. The best interdisciplinary research, he said, is that which goes on within one skull.2 It is also true that economics has a good deal to contribute to this interdisciplinary theory, not so much because of its subject matter as because of the greater advance in economics than in the other social sciences, in understanding of the concepts of a general analytical model and of functional relationships. These facts, plus my own interest in economic growth, plus the further fact that someone has to get started with the job of spinning interdisciplinary theory if only in an attempt to arouse the interest of the several relevant disciplines, are my reasons for having devoted the last four and a half years largely to hard study of current theory in Freudian psychology and social psychology, sociology, and anthropology, and under a grant to the Center for International Studies from the Rockefeller Foundation, to formulating and to some degree testing empirically a general interdisciplinary theory of how economic growth begins.

TV

In the few minutes remaining, let me discuss the problems which a relevant model must attack. (For somewhat fuller discussion, see [2,3].)

First, contrary to popular belief, present underdeveloped countries cannot simply imitate our methods. Technological progress requires creativity in presently underdeveloped countries just as it did in the first industrial revolution. The creative man has a special type of personality and there is some reason to believe that creative men do not exist in a society in equal numbers at all times, just waiting, so to speak, to pounce upon economic opportunity when it appears, but rather that

¹Traditional society and society with stationary technology are not identical, but the two sets of characteristics tend to appear together.

² Quoted orally by Henry A. Murray.

one of the factors conducive to the appearance of technological progress is at least a moderate increase in the number of creative individuals in the society, and in the level of their creativity.

Specifically, individuals in a traditional society are not simply the same kind of persons that modern industrialists are except that they have not yet learned as much or accumulated as much capital. Rather, they value different things highly; some of what the psychologists call their "needs" are different; and they carry a different image in their heads of what are the forces which govern the world. Such a society will not make continuing technological progress until certain changes occur in those values, needs, and world view. A theoretical model must explain these aspects of personality in a traditional society, and must then explain how personality changes in a way conducive to creative innovation.

Freudian psychology has a good deal to tell us about how the home environment affects permanently the personality of the children, and by some speculative extensions of that psychology we may guess how creative persons emerge and how values change.

But it is to be noted that in countries which have entered upon economic growth, unusually creative persons, with changed values, have not appeared at random throughout the society. Rather, they have been clustered in some social group or groups. It is therefore necessary to have a theory about the relationships among social groups in a society, and one which explains how a change in those relationships may occur, which cause a change in the home environment in some one group that tends over a generation or a few generations to produce unusually creative individuals with changed values.

Finally, it is not in the least inevitable that creative and rebellious persons should turn to technology. During many ages, in many countries, they have in the main turned elsewhere, and at any time some such individuals channel their energies elsewhere. It is necessary to evolve a theory which explains how at some times a burst of creative and restless energy in a society gets channeled into technology—how this comes to be valued highly. Economic circumstances of course affect this process and have their place in the model along with other factors.

At this point I can only assert rather than demonstrate that these changes in a society can be "explained" by a highly simplified model of a society whose interrelationships are not arbitrary or fanciful but rather are, I hope, in accord with the best present theory in the several social sciences.

I would like to tell you something about the substance of the model I have evolved, but within the fifteen minutes allotted to each of us I cannot. Let me say merely that the forces for stability residing in the functional relationships are such that exogenous economic changes alone will

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hardly stimulate a transition from traditional society to continuing economic growth. Given certain coefficients, a more or less random initial advance in technical knowledge may have a cumulative effect over a very long time that will do so. Much more interesting are certain changes in the social structure which will stimulate a socially rebellious group to new values, creativity, and, in certain circumstances, economic growth. The model requires a conjunction of circumstances to produce economic growth. The requirements are not highly exacting. Over quite a range of variation of the relevant values, if you give the model a nudge at some time in its history, economic growth will be the outcome.

The model matches and "explains," in my judgment, major elements in the transition to economic growth in England, in Russia, in Japan, in Colombia, and perhaps elsewhere when other cases have been explored: and also explains major elements in the failure of growth to occur in a number of other societies. I hope that it has some predictive value. Whether or not this optimistic assessment of its usefulness proves to be correct. I am convinced that only such an interdisciplinary model can give us an understanding of the transition to economic growth adequate for analytical purposes.

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RESEARCH ON AGRICULTURE AND ECONOMIC DEVELOPMENT

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I. Problems of Underdeveloped Countries

In spite of the fact that 50 to 80 per cent of the populations of most underdeveloped countries are engaged in agriculture, surprisingly little economic research has as yet been devoted to the interrelationships between agriculture and general economic development.

Insofar as general economists have concerned themselves with the problem at all, their approach has usually been too global to throw much light on the role of agriculture in economic development. To be sure, their typically macroeconomic approach has had certain important virtues in terms of its over-all perspective, its emphasis upon major intersector relationships, and its tendency to view economic development in a dynamic rather than static context. However, the general economists of both advanced and underdeveloped countries have usually been abysmally ignorant of agriculture and village life. Hence the validity of their analyses has frequently turned on their assumptions as to fact—for example, the extent of disguised unemployment in rural areas and the potentialities of increasing food output with given supplies of land and labor, about which far too little is as yet known. They have also tended to deal in such abstract agglomerates as capital without regard for the fact that, within agriculture, the expansion of certain minor components of the aggregate capital might, by supplementing the supplies of particular limitational factors, have very low incremental capital-output ratios. As a consequence, particularly for overpopulated countries with a clear and present danger of food shortage, the policy implications of their analyses have, in my opinion, often tread on perilous ground.

For example, I believe that general economists have given far too little recognition to the importance of increasing agricultural productivity as a precondition of economic development in overpopulated countries. Even W. Arthur Lewis—whose general analysis of the relations between increasing agricultural productivity and over-all economic growth leaves little to be desired—appears to me to be inconsistent in suggesting elsewhere that, as a target for 1980, India should seek to increase its export surplus of manufactures sufficiently to pay

for annual food imports worth more than 4 billion dollars by that time. Benjamin Higgins and other advocates of "big-push" industrialization as the only major means of increasing agricultural productivity—means which require huge rural-urban shifts of population and radical increases in the scale of farming—seem to have fallen into a similar trap.

To such economists, the recent report by a Ford Foundation agricultural production team on India's impending food crisis-with an estimated annual food-grain deficit approaching the United States' total annual wheat production by 1965—should give sobering thought. One need not question the long-run validity of the Lewis-Higgins policy position for India to argue that 1965 comes first, that India has enormous opportunities for increasing food output per hectare and per worker by initially land-saving rather than laborsaving investments in agriculture, and that (as Bruce Johnston has so clearly shown for Japan) such investments if given high priority can contribute greatly to the general economic development of overpopulated countries. Only as such policies succeed in achieving and sustaining a reliable food surplus (or in at least reducing the food deficit to a magnitude which expanding manufactures for export might realistically be expected to cover in the near term) does a shift of emphasis to the large-scale transfer of farm population into nonfarm employment and to laborsaving devices in agriculture begin to make sense.

If I am correct in my view that exclusively macroeconomic analysis of economic development problems is more likely to produce wrong short-term policy recommendations than the right ones, the general economists are not necessarily to blame. The plain fact is that the complementary studies of the technological, economic, and sociopsychological relationships within the dominant agricultural sector of underdeveloped countries have been woefully few. This deplorable dearth of basic knowledge about agriculture reflects the extreme shortage of welltrained indigenous agricultural specialists both economic and technical in such countries. It also reflects the failure to date of Western agricultural specialists to devote more of their research resources to specialized studies of foreign agriculture and the thus far peripheral interest of the great American land-grant college system in institutionalizing such foreign oriented research as a normal and vital part of its total research activities. Until we have a substantial increase in both the quantity and quality of microeconomic and specialized technical research on the problems of the world's low-productivity agriculture, macroeconomic analysis must continue to rest upon a very speculative and shaky base.

Thus far, I have emphasized the overpopulated countries, where the basic and extremely difficult problem of food capacity may often de-

mand solution as a precondition of economic development. For countries which have either largely solved this problem or have been fortunate enough to have avoided it altogether, however, it is clear that further agricultural progress must go hand in hand with industrial progress. While here there must be some attention to balance between agricultural and industrial development, big-push industrialization policies have much to offer if complementary policies to facilitate the movement of surplus workers out of agriculture and to facilitate the movement of capital into agriculture are at at the same time not neglected. Certainly industrialization can now play a key role, not only in furthering general economic development, but in spreading its benefits to the more remote regions and still large rural population of the given country. As the experience of the United States makes evident, even the most advanced countries of the world may have serious problems of underdeveloped regions where economic progress has lagged far behind the nation as a whole. That such results are possible reflects fundamental imperfections in the factor markets (particularly labor and capital mobility) which tend to be greatest in predominantly rural-agricultural regions whose rates of industrial-urban development have been relatively low. Thus countries which are plagued with food surpluses rather than food shortages may also have to face problems of a low-productivity agriculture, regionally if not nationally, which demand serious research attention as the basis for finding satisfactory solutions.

Therefore, we may see that the interrelationships between agriculture and economic development are of great importance for the whole gamut of countries ranging from the most backward to the most advanced. Even so, for the more advanced countries as for the less developed, there has been a serious shortage of economic research on these important interrelationships, particularly by economists with some special competence in agriculture. A major exception is T. W. Schultz's pioneering book, The Economic Organization of Agriculture, which represented the culmination of more than a decade of his seminal thought and analysis of these matters. We may expect another major contribution from Professor Schultz during the next two years as he fulfills his commitment to write the monograph on agriculture in Yale University's projected new series on "Comparative Economics." Additional contributions to this area should also be forthcoming in connection with a Conference on the Role of Agriculture in Economic Growth, to be held in November, 1960, under the sponsorship of the SSRC Committee on Economic Growth, with D. Gale Johnson as conference chairman. Finally, Lawrence Witt. Sherwood Berg, and other agricultural economists have been striving to find means of persuading the U.S. Department of Agriculture and the

land-grant colleges to take on a major and continuing responsibility for research on the agricultural problems of underdeveloped countries. While these several efforts are still in their early stages, they do encourage the hope that this vitally important area of research may soon begin to receive the attention it so strongly deserves.

II. Problems of Underdeveloped Regions

Meanwhile, at least some solid research progress has been made in recent years on the regional aspects of agriculture and economic development—notably in southern Italy, in northeast Brazil, and especially in the southern United States. Research on the agricultural problems of the underdeveloped American South has been receiving increasing attention. Among the major contributors to this effort have been Hoover, Ratchford, and their colleagues at Duke University; Schultz, Johnson, and their Chicago colleagues; C. E. Bishop and associates at North Carolina State College; Vernon Ruttan, of Purdue University (formerly of TVA); W. E. Hendrix and others in the U.S. Department of Agriculture; Robock, Baum, and others in the Tennessee Valley Authority; and Tang, Bachmura, and myself at Vanderbilt University. Since space limitations will not permit here a critical survey of this recent literature, I shall conclude with a brief summary of the objectives, methods, and findings of a large-scale research project on Southern Economic Development and Agriculture which has been under way at Vanderbilt University since 1952. The most impressive product to date of this Vanderbilt project is Professor Anthony M. Tang's recent pathbreaking book, Economic Development in the Southern Piedmont, 1860-1950. My own efforts have thus far produced a series of journal articles (cited in Economic Development and Cultural Change, Vol. 5 [1957], page 308n.) -which I hope to bring together later into a second monograph-reporting on the findings of my parallel study of the Upper East Tennessee Valley.

While our approaches have differed in detail, Professor Tang and I have had a common objective. Each of us has sought to test a series of subhypotheses which may be grouped under three major headings: (1) that the labor, capital, and product markets facing agriculture are relatively more efficient in local areas which have enjoyed considerable industrial-urban development than in similar nearby areas which have not; (2) that the effects of such different rates of industrial-urban development have accordingly been increasingly wide interarea differences in per-worker agricultural capital and farm output. (income); and (3) that fundamental impediments to equilibrating factor movements exist, tending to perpetuate differences in market efficiency and agricultural

productivity between the more and less industrial areas. To this end, each of us selected a group of twenty to twenty-one contiguous counties (each with a combined area equivalent to one of the smaller states) which have had a common historical and cultural background; which some fifty to seventy-five years ago had a similar dependence on agriculture and similar farm output per worker; but some of which have since experienced substantial rates of industrialization while others (the control group) have remained largely rural-agricultural.

Each of us has made a very thorough analysis of the economic development of his area during the entire century 1850-1950, but we have put greater emphasis upon the period since 1900 and have analyzed with special intensity the dynamic years since 1940. For sources of data, we have relied primarily upon the United States Census, supplemented insofar as possible from the important statistical compendia which contained relevant socioeconomic data on a county-unit basis. Our statistical methodology has been relatively simple, consisting largely of correlation techniques applied to the ranks of our data rather than to the original data themselves. Tang successfully employed Wilcoxon's rapid sum-of-ranks technique which often enabled him to eliminate calculations of various socioeconomic indexes for all but his five top-ranking (most industrial) and five bottom-ranking (least industrial) counties. Because of the more erratic nature of several of the counties in my study area, I found the Wilcoxon method less satisfactory. Instead, I applied Spearman rankcorrelation techniques to my entire sample of twenty counties, in each case correlating their ranks in industrial development with their ranks in numerous other socioeconomic indexes. While our choice of these simpler statistical methods was primarily based on their economies in computing time, their use also appeared to be appropriate in view of the crudeness of our data, our small numbers of observations, and the failure of our data to fulfill the assumptions implicit in parametric techniques.

Our findings may be very inadequately summarized as follows:

1. Within each area, today's more industrial counties had in 1850-60 an agriculture with certain significant advantages over the agriculture of today's less industrialized counties. Among these advantages were superior "original" agricultural land, certain differential windfall gains from new cash crops, and higher rates of capital formation in agriculture. Under conditions of perfect factor immobility, such original differences might have sufficed to account for today's wide income differentials within each study area. During the preindustrial years 1860-1900, however, these earlier intercounty differences—for example,

in agriculture's capital-labor ratio—virtually disappeared. Our analyses thus indicate that, despite imperfections in the factor markets, there were sufficient factor (particularly labor) transfers to eliminate those income differences attributable to differences in original physical endowment. (Of course, the study area's equilibrium level was nonetheless far below those of other more industrial-urban areas.)

- 2. In 1900, today's more industrial counties did not have significantly different levels of farm capital per worker or farm output per worker from today's less industrial counties. By 1940, however, today's more industrial counties had not only experienced differentially high rates of industrial-urban development but their agriculture also clearly enjoyed superior capital-labor ratios and higher farm-labor productivity. Although equilibrating factor transfers (as measured by relative rates of human migration) had meanwhile continued at substantial levels, these were obviously insufficient to prevent an increasing divergence in farm incomes and productivity within each area. Instead, our analyses strongly support the view that local industrial-urban development made an important positive contribution to the efficiency of the local factor and product markets; thereby greatly facilitating the transfer of excess labor out of agriculture and of needed capital into agriculture within the immediate environs of the growing industrial center. Counties lacking such dynamic conditions of industrial-urban development were unable to hold their own through out-migration alone, even though such labor transfers had once sufficed to overcome income differences attributable only to original resource endowments.
- 3. The period 1940-54 permits the acid test for our conclusion that local areas cannot, in the absence of the industrial-urban development enjoyed by neighboring areas, overcome their differential disadvantage in farm incomes and productivity through out-migration alone. This most recent period provided not only sustained prosperity and full employment but conditions of war-induced resource mobility as well. The consequence was exceptionally high migration rates, particularly for our less industrial counties. Yet, within each area, the more industrial counties have since 1940 been able to maintain most if not all of their relative advantage over the less advanced counties in perworker farm capital and farm output. Thus, the ability of the more industrial counties to offer redundant farm workers a change of occupation without necessitating a change of residence was of paramount importance.

While our research at Vanderbilt has been applied to relatively small, homogeneous areas, I believe that its policy implications have considerable relevance to the problems of much larger underdeveloped

regions or countries. First, industrial-urban development offers the major hope for solving the problem of low agricultural productivity, once prior problems of an inadequate food supply have been met. Second, insofar as not inconsistent with fundamental economies of location and scale, the more widely dispersed such industrial-urban development, the more generally can agricultural productivity be increased. Finally, particularly for those areas which lack the attributes required for sound industrialization, public policy must provide for facilitating farm-labor and farm-capital mobility at rates far in excess of those which can be expected under complete laissez faire.

THE ROLE OF GOVERNMENT IN ECONOMIC DEVELOPMENT

By Edward S. Mason Harvard University

The critical question confronting research on the role of government in economic development is the extent to which government can shape, or is inevitably shaped by, the society of which it is a part. To a generation deeply influenced by Marx, society, or rather basic economic and social change, was the shaper and government very much a strictly determined product. And indeed in the society that Marx described and analyzed—the society of Western Europe, and particularly Britain -government was shaped by the society. As George Unwin put it, "The main feature of British history since the seventeenth century has been the remoulding of a State by a powerful Society." But the political descendents of Marx have demonstrated in no uncertain a manner that the state, appropriately equipped with instruments of authority, including terror, can go a long way in reshaping the surrounding society. And currently governments in Asia and Africa, in part influenced by the Soviet example, are making a determined effort to put their stagnant economies on the road to what they call selfsustained growth. To what extent are they likely to be successful in working and reworking the resistant dough of custom and of traditional institutions? And to the extent they are successful, what instruments of authority will they find it necessary to use?

If the critical question has to do with the possibilities of, and limitations on, action by government within the social context, it is obvious that a large variety of situations need to be examined. It may be that the relationships will not yield to analysis or model building and can only be examined historically, country by country. Certainly the differences among countries strike one as forcibly as the similarities. Neverthless, it will be useful, I believe, to distinguish three possible common areas of research in which the data to be examined are differently related.

First consider the changing role of government over time within a relatively stable social structure and culture, e.g., Western Europe and the areas of European settlement, since the beginnings of industrialization. To choose such an area and period implies at least

George Unwin, Studies in Economic History (London, 1927), p. 28.

two things. It implies, on the one hand, that it is fruitful to examine the similarities and interrelationships among the countries that make up this culture as well as the special circumstances of a particular country. On the other hand, it means that despite a continuous process of change over roughly two centuries it is still useful to think of this as development within substantially the same society. We may or may not be in process of managerial revolution in the United States, but the implication of this approach is that recent changes in our economy are not sufficiently drastic to alter markedly the functioning of the system. If we can accept these implications, it seems reasonable to demarcate this time period and this area as one in which it may be useful to examine comparatively the changing role of government in the society and in relation to economic development.

If we look back to the beginnings of industrialization in the West, particularly in England, we can hardly fail to be struck by smallness of the positive role played by government in the development process. Apart from maintaining law and order, adapting the legal framework to meet the conditions of enterprise, and providing a minimum of social and economic overhead, the main contribution of government was to get out of the way. In the United States, government's role was larger but the initiative did not come principally from Washington or the various state capitals but from private groups who needed public action to further their own economic interests or the interests of their areas. The prime mover of economic change was private enterprise, and, indeed, at this stage of development it is difficult to see how it could have been otherwise. Whatever the merits of public administration, it is not well adapted to the process of woodshed invention, trial and error experimentation, and risky decision making that characterized the early stages of the industrial revolution.

On the Continent, where industrialization came later than in England and where the philosophy of natural liberty never cut quite so wide a swath, the role of the state in economic development was much larger. Gerschenkron, in an essay that has become a classic in this field not very well supplied as yet with classics, relates an increasing role of the state to the degree of backwardness found in the society in which the growth process is being initiated. Backwardness can accentuate the role of government in at least two ways. By influencing the goals of the society and the motivations of its political leaders in ways that can only be realized by public action, backwardness can shift the onus of development to government. But late-comers are also impelled along this route because government can play a role in the transfer of established technology and forms of organization that it could never have played in their initiation. This was true in the later de-

velopment of Western European countries and it has particular relevance in the currently underdeveloped world.

Relative backwardness may certainly influence the character of development and the role played by government in its promotion, but within a common culture there are strong similarities as well as differences in this role. In all the countries of European settlement the process of development since the beginnings of industrialization has brought with it urbanization; a division of labor, a proliferation of markets, and a growing interdependence within the economy; the organization of trade-unions and other interest groups; a growth in per capita incomes with attendant shifts in the pattern of demand; and other changes that put new problems to government. Obviously there are large dissimilarities in the rates and character of development and in the response of governments within the area of Western European settlement, but the similarities of action and response are sufficiently important to justify a careful comparative study of the role of government in the developmental process within this culture.

Nor is the role of government within this process a limited one of passive response to class or group pressures. A corollary to the question of how does government react to the changing pattern of economic development is, what can government do to change and shape this process? Throughout most of the area of Western European settlement during the period under consideration some type of parliamentary democracy has been the preferred form of government. There are those who say that this is a form of government that can hardly be expected to survive a transition to a social structure in which the role of the state is very much larger than it has been during the period of Western industrialization. However that may be, it is clear that parliamentary democracy is a system of government that accentuates the interrelatedness of state and society. The society exerts its influence on governmental action through group pressures of various sorts and it is probably correct to say that the possibilities of governmental action to promote development lies within limits imposed by the possibilities of compromising the divergent interests of politically powerful groups. Still, these limits may be fairly wide if the relevant groups recognize, as they have tended to do in Western society, that economic development is likely to benefit all groups though in different degrees. And there are striking evidences that the recognized divergence of interests among groups in Western countries is becoming less. The cohesiveness of these societies is probably growing rather than declining.

Nevertheless, it remains true that in a society in which government remains as responsive to group action as it is in Western parliamentary democracies the limits of public action oriented toward economic growth are real. These limits can, perhaps, be illustrated by the current controversy on the question whether it would be possible for the United States to raise its long-term growth trend from 3 per cent per annum to, say, 5 per cent. This would presumably require a large expansion of productivity increasing expenditures and a direction of these expenditures into channels promising a high rate of productivity increase. It is difficult to see how this could be done without an expansion of the public sector and a proliferation of controls on private actions quite unacceptable to politically powerful groups in the community.

Still, within the limits set by the necessity of securing popular consent, the field of action open to government in pursuit of economic development is substantial even in a society whose social structure may be considered to be relatively stable. A considerable part of the research on the role of government in economic development will necessarily be concerned with policies and programs directed toward that end. There are various ways of grouping and classifying types of government action and the utility of any particular way will no doubt be related to the purpose of the research. It may be fruitful to distinguish the role of government in assisting an expansion of the supply of resources, from its influence on the direction of resource use, and its participation in resource management. Or again it may be useful to consider government activities in the public sector, in the private sector, and in various mixed relationships that, in Western society, are becoming increasingly common. These are merely two among many possibilities.

Within the limits of a common and fairly stable culture, the possibilities of movement among countries of ideology, science, technology, talents, capital, population, and goods make it probable that the course of economic development will be largely similar, the problems put to government similar, and that innovations in government organizations or policies or in government-business relationships in any particular country may be usefully studied in relation to the course of development in others. The fact that much of Latin America is an area of European settlement still open to massive transfers of talent, technology and capital, serves to differentiate rather sharply its probable course of development from that of other underdeveloped areas.

Second, let us consider the role of government in a society in process of drastic change. Obviously societies are always in process of change but it does not do violence to the facts to differentiate a period and an area such as Western Europe in the nineteenth century from the current situation in much of the underdeveloped world with respect

to actual and potential rates of change. Marx has given us a model for the study of revolutionary change in which the transfer of political power from one group to another represents, on the one hand, the final stage of the disintegration of an old society and, on the other, the first step in the integration of a new. But the Marxian model tells us that in reality the new society has already been shaped within the womb of the old. Although the role of the state, during the period of the "dictatorship of the proletariat," in bringing into being the institutions of the new society, is an important one, essentially the institutions, values, and motivations of the new society are predestined by the course of development of the old. Government in effect sets its seal upon that which social change has produced. In classical Marxism, government in revolutionary, as well as evolutionary, periods of history is very much the shaped rather than the shaper of the course of events.

This model, whatever its applicability to other historical situations, does not seem to fit the facts of the Soviet and Chinese revolutions nor may it have much relevance to the course of development in southern Asia and Africa. Although in the Soviet Union and China the process of disintegration in the old societies had proceeded far and the ground was well prepared for a transfer of power, there was little evidence of the appearance of an alternative "mode of production" around which the institutions of the new society could be organized. To bring these institutions into being and to shape the new society has been in fact, in the Soviet Union and China, the task of governments holding, in Lenin's phrase, a "monopoly of violence," equipped with a well-developed ideology, and availing themselves of all the instruments of authority and terror.

The Soviet and Chinese examples at least raise the question, in the traditionalist societies of southern Asia and Africa, whether governments appropriately equipped with development aims and a development ideology, able to draw on the technology of more advanced areas, and not lacking in the instruments of authority, may not go very far in reshaping their own societies. Clearly these governments to be successful will have to command a measure of popular support and obviously their sphere of action is limited by the characteristics of the society of which they are a part. But the ratio of the politically inert to the politically active elements in these societies is so large that the necessary support may come from a relatively small element of the population. And, as the experience in a number of southern Asian and African countries has already indicated, governments in these newly independent states are not likely to limit themselves very long to an observance of the trappings of democracy.

Third, although the role of government in the process of develop-

ment is largely shaped in the reciprocal relations of state and society, there are no doubt elements in the physical environment that will influence that role. It has, for example, been observed that the size of an economy, by various measures, is related to its degree of dependence on international trade.² In the competition for export markets, government has some notable disadvantages compared to private enterprise, as the example of Israel suggests. It may be that a high degree of dependence on foreign trade may not be compatible with an effective government control of the direction of resource use.

The size of an area of potential settlement in relation to the available human resources also conditions the relation of public to private enterprise. In early American development, both state and federal governments were called upon to undertake tasks that by reason of the size of the area and the sparseness of the population were beyond the capabilities of private enterprise. The very sizable fraction of total investment that in various Latin-American countries falls in the public sector is influenced by these physical considerations. No doubt there are many other aspects of the physical environment and of the relation of human to physical resources that deserve attention in an inquiry into the role of government and economic development. But let me conclude by repeating the statement with which this discussion began: The critical question that must guide such an inquiry is the extent to which government can shape, or is inevitably shaped, by the society of which it is a part.

² Simon Kuznets, "Economic Growth of Small Nations," ed. A. Bonne, The Challenge of Development (Jerusalem, 1958).

THE FACTOR PROPORTIONS PROBLEM IN UNDERDEVELOPED AREAS

By RICHARD S. ECKAUS

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The factor proportions problems of growth in underdeveloped areas can be discussed on both theoretical and empirical levels. I should like on this occasion to emphasize the empirical aspects because these have been most neglected, I believe, and the need for research work at the empirical level is most pressing. However, this need can be best appreciated by first reviewing some of those theoretical and practical issues which involve factor proportions problems.

I should make clear what I consider the factor proportions problems of underdeveloped areas to be. They are the problems, arising from technology, of adjusting the proportions in which factors are used to the factor endowments which are available in underdeveloped areas. In principle these problems are not different from those faced in advanced countries but practically they are often of a different magnitude.

First of all, the technological changes either occurring or in prospect for underdeveloped areas are pervasive and profound departures from the previously used techniques which have often become imbued with cultural traditions. By comparison, the technological innovations which occur in advanced countries are marginal changes, which do not represent such abrupt transitions with such far-reaching consequences for culture as well as economy.

Second, technological change in underdeveloped areas is nearly always imported from advanced countries whose factor endowments are usually quite different. Thus, while some of the technological imports may economize on all factors, others, adopted willy-nilly, will economize on the wrong factors.

Finally, technological choice in underdeveloped areas is a more obvious problem just because it is done more consciously, more publicly, and is often undertaken directly by government or under the control of its policy.

In the mounting theoretical literature on economic growth and underdeveloped areas, the factor proportions problem in one form or another is one of the most frequently recurring themes. One type of growth model which has had considerable currency in the literature is that of Harrod and Domar. This model has been criticized on empirical grounds by economic historians such as Professor Rostow and by development economists such as Professor Rosenstein-Rodan as not adequately describing the pattern of events in growth. It has also been demonstrated by Professors Solow and Tobin that the potential conflict in the Harrod-Domar model between a full employment and a full-capacity rate of growth depends to a considerable degree on the assumption of production functions in which there are near limits to the possibilities of factor substitution. It is clear that this type of model bears a close relationship to the theory of unemployment and underemployment in underdeveloped areas which trace these phenomena at least in part to limited labor substitution possibilities.

Another major theoretical preoccupation with respect to underdeveloped areas has been the formulation of criteria for allocating investment among sectors and for choosing the optimum technology. Professors Kahn, Liebenstein and Galenson, Chenery, Bator, Eckstein, and Messrs. S. Chakravarty and A. K. Sen have been major contributors to this literature. Again a central issue has been the factor substitution characteristics of technology. Gestation periods and depreciation, which also play a role, have, however, been relatively neglected in the theory.

The related discussions of economic programming, the proper relations between agricultural and industrial development, and the significance of "balance" in economic growth also, to a considerable extent, turn on the assumed technological characteristics of the various sectors. The weight given to technological external economies and indivisibilities in the contributions of Professor Rosenstein-Rodan provides a further example of the significance of technological characteristics in the theoretical treatment of growth and development.

Finally, let me mention an issue which has received relatively little attention in the theoretical literature. The changes in relative factor use and corresponding changes in factor productivity which occur in the process of economic growth are usually associated with changes in technology. However, in the process of growth it is common to find systematic changes occurring in the organization of enterprise. The identity of the household and the basic productive unit breaks down. Establishments emerge in which there are employees who are not part of the household. The corporate form, in which all the members of the organization are employees, is the extreme of this development and is, therefore, at the opposite end of the scale of organization from the household firm of underdeveloped economies. We should not be surprised to find that intensity of factor use and factor productivity is sensitive to the organization of enterprise. This is, after all, one of the lessons we have learned about monopoly, oligopoly, and monopolistic competition. However, if we recognize the influence of the form of the

organization of enterprise, we can no longer easily identify changes which occur in productivity with changes in factor intensity or technology. Historically, changes in technology and changes in enterprise organization have occurred together; to know to what extent this is an essential simultaneity it is necessary to have much more information.

Some of these theoretical problems which have been briefly described are related to policy formulation. Their resolution would lead very directly to improvements in the techniques of planning for economic development in underdeveloped areas. Not all have this slant, however. Factor proportions information is necessary for the purest purposes of scholarly investigation. Many of the most fundamental phenomena of growth are associated closely with technological change. To understand them, more knowledge is required of technology than is now available.

In fact, economists know very little about technology although we often assume a lot. It is useful to review in a general way what is known about the technological issues which have been mentioned.

How important is input variability in production processes? It seems almost a matter of faith with some economists to assert that there are no limits to technical substitutability of factors. And there are other economists who will as firmly assert that the world is composed of fixed technical coefficient technologies. But it is not possible to settle this issue a priori, although the attempt is sometimes made. For example, it is sometimes asserted that it is always possible to imagine highly labor-intensive or highly capital-intensive processes for almost any kind of production. Imagination cannot be relied upon, however, to create only efficient processes, and only efficient processes count. There are many ways to be inefficient and there is no way of isolating these on an a priori basis.

Historical arguments are sometimes used to demonstrate that there must be wide ranges of input variability. It is clear that quite different processes have been used in the past. But simple observation will not tell us which of those processes are still efficient and which have been dominated by newer developments. The recent Chinese experiment with small blast furnaces has attracted much attention as a technological revival which makes use of much more labor, relatively, than the methods now widely used. The experiment has been virtually dropped, however. The small furnaces were undoubtedly more fuel intensive than modern furnaces and possibly more capital intensive, especially when transport requirements are considered. If this is so, then these were just inefficient compared to larger units.

It is worth mentioning that the typical opinion of engineers seems to be that the most common technological situation is one in which there are, at most, just a few alternative factor combinations which can be used in production. The engineer's specialization, however, may put blinders on him which are as effective in making him an unreliable judge of over-all opportunities as is the economist's ignorance.

Examples can be cited back and forth of input variability or the lack of it, but this is an inconclusive exercise. In order to evaluate the importance of technology as a source of unemployment, it is the range of factor variability in relation to factor endowments, demand and spending-saving behavior which is important. Examples are not adequate to resolve this issue.

What actually do we know about economies of scale and their sources? The economic advantages of large over small and of advanced over underdeveloped countries are frequently explained, at least partly, in terms of economies of scale. Industrial history of the last century and a half seems replete with examples. However, in many cases organizational changes are also made when a large-scale operation is put into operation. This makes it very difficult from superficial observation to disentangle the efficiencies due to economies of scale from those due to organizational change.

Different technological characteristics are often ascribed to different sectors. Agriculture, for example, as compared to industry is generally considered to have more opportunities for input variability and less for economies of scale. But here is another case in which for the most part all that we have to rely upon is assertion.

External economies are a particularly elusive phenomenon. Once thought to be no more than an economic curioso, they now play a major role in development theory. Yet how many examples can be cited which seem significant. There are the well-known labor-training effects of production which cannot all be captured and measured in markets. There are the risk-reducing effects of concerted economic effort which likewise may, to a considerable degree, be external to markets. A paucity of cases does not, however, mean that externalities are unimportant. The examples given in which both technological and institutional factors play a role have never been studied carefully. Unfortunately, there are too few profound students of the economics of technology to give us much confidence that the list has been exhausted.

Actually the situation is not quite as bad as I have represented. We do have some empirical knowledge about technology. Some of the speakers at this session have been major contributors. The knowledge is spotty, however, covering bits and pieces of the panorama. It is true, moreover, that research on this area faces some particular difficulties. These will be described before going on to survey what has been done and what I believe needs doing.

It will help to illustrate the difficulties of empirical research on technology if it is compared with research on consumer behavior. Macroeconomic studies have provided a great deal of information about the determinants and behavior of total consumption and its components. By comparison, aggregative data in similar detail on the use of productive factors is not available. By some heroic simplifications, Professor Robert Solow has used the available information to isolate for the United States the aggregate effects of an increase in factor availabilities as compared to technological progress. But increased efficiency in the use of factors and increasing returns to scale, to name but two alternatives, might also account for the results obtained, as Professor Solow is the first to state. The intermediate flows of inputoutput tables reflect the influence of technology, of course, but do not present a clear image. Such factors as the degree of integration of firms and the amount and directions of subcontracting are also important determinants of the so-called "technical" coefficients of inputoutput tables.

In the study of consumer behavior, household budget studies have been used extensively to supplement macroeconomic data. Unfortunately no similar survey technique can be applied generally in the study of technology. Though budget studies are expensive, the responsiveness of consumers, as well as other features of the problem, makes such mass surveys feasible. Business firms, on the other hand, are notoriously unresponsive, and for understandable reasons. Moreover, the heterogeneity of inputs and outputs makes the collection and collation of technological data much more difficult.

Technological influences, although they operate quite widely, operate somewhat differently in each firm and industry, depending on individual behavior, firm organization, and so on. With the potentialities of survey methods quite restricted and macroeconomic data limited in its revelations about technology, it is necessary to fall back on case studies. The most basic kind of information can be obtained only by isolating technical processes and carefully measuring the factor inputs and outputs. Only by accumulating such studies can the technological information be obtained which is necessary to resolve the theoretical and practical issues described above.

Quite useful empirical research has been done on factor proportions and more is under way. In a brief survey I cannot list all that is worth while; so I shall only try to exemplify the contributions.

Macroeconomic studies of productivity such as those of Professor Solow, of M.I.T., and John Kendrick at the National Bureau of Economic Research aid our understanding of the relative historical importance of increases in the quantity of factors as compared to techno-

logical shifts or increasing returns. These studies, like many other studies which focus on labor productivity, do not, however, penetrate to the causes of the changes in productivity. Thus they do not provide a firm basis for prediction, planning, or explaining what is happening in any current situation.

Though input-output tables are quite useful tools of planning and estimation, they have their drawbacks as indicators of technology, as mentioned above. However, the empirical research on the technology of particular processes which was inspired by its input-output applications has been substantial. Professor Chenery has been a major contributor in this area at all levels.

In the agricultural sector there are a number of instances of thorough studies of specific operations. This is, classically, the sector in which estimation of the characteristics of production functions originated and which, probably, still retains the lead. Professor Nicholls has contributed in this area. Much remains to be done, however, especially on the types of agriculture found in underdeveloped areas. The investigation of disguised unemployment in agriculture in the south of Italy which was sponsored by the Italy project of the Center for International Studies is an example of the application of survey methods to a problem of both theoretical and practical interest.

There are several types of studies which contribute to a general understanding of technology. It is particularly appropriate, considering our meeting place, to mention the work of the U.S. government agencies in this respect. Within the Department of Labor the Bureaus of Labor Statistics, Employment Security and of Apprenticeship are all making general contributions; the Departments of Agriculture and Commerce likewise. Much of the recent discussion of the implications of automation also falls into the category of generally informative literature.

The type of study of industrial technology which works at the most basic level of measuring the amounts and types of all inputs to productive processes is relatively rare. At the RAND Corporation, Markowitz, Hoffenberg, and Rowe began a series of analyses a number of years ago which focused on individual production processes. Unfortunately this series was discontinued after producing a basic study of machine-tool substitution possibilities. The Netherlands Economic Institute at the instigation of Professor Tinbergen has also adopted a fundamental approach and has turned out a number of studies. The Division of Industrialization of the Department of Economic Affairs of the UN is sponsoring a continuing study of the adaptation of technology to the conditions of underdeveloped areas.

Finally, the Center for International Studies at M.I.T. has had a continuing interest in these problems and is sponsoring research at

several different levels. My own project, sponsored also by Brandeis University and financed by the Rockefeller Foundation, is intended to include work at both the macro and micro level. One phase has been a survey of the labor skill requirements associated with different types of technology. It deals explicitly with the heterogeneity of labor inputs, the costs of creating skills and their transferability. Other projects include a study of particular processes.

The approach we are adopting at the Center to the study of the factor requirements of industrial technology is intended to be a fundamental one. We are organizing co-operative work with engineers to map the factor requirements of technologies now available. If it seems feasible, we shall try to stimulate engineering effort in those areas of technology in which the need seems most pressing for processes particularly suited to underdeveloped areas. Of course, such investigations will in some cases lead to comparative analysis of alternative systems of processes.

To be sure, the research I have outlined is not one in which results come easily but it should not on that account be abandoned. As nearly all economists would agree, the influence of technology is too profound to be ignored.

INTERINDUSTRY RESEARCH IN ECONOMIC DEVELOPMENT

By Hollis B. Chenery Stanford University

Some of the important questions in the field of economic development stem from the interdependence among sectors of the economy. Rosenstein-Rodan [20] and Nurkse [19] emphasize the importance of external economies in determining optimum levels of investment. Rostow [21] visualizes the process of growth as deriving from a rapid advance in "leading sectors," which in turn induces expansion in related branches of production. In the practical sphere, efforts of underdeveloped countries to raise levels of output are often frustrated by the existence of bottlenecks which prevent the full use of resources available elsewhere in the economy.

The bulk of empirical research in this field has been stimulated by the need to devise better methods for making economic projections and allocating investment resources. Efforts are also directed toward explaining historical changes in the economic structure by means of interindustry analysis. I shall touch briefly on recent published examples and current research of both types.

I. Analysis of Structural Change

Two studies serve to illustrate the type of structural change for which interindustry analysis is most useful. In one of the first applications of the method to historical analysis, Leontief [17] computed the labor that would have been required to produce the goods demanded by the American economy in 1939 if 1929 production techniques had been used. In this way, he was able to measure both the direct and indirect saving in labor due to technological changes and substitution in different sectors of the economy. In another historical comparison, J. Meyer [18] showed that the lower growth of British exports at the end of the nineteenth century accounted for the retardation of growth in other sectors of the economy.

Current work of the Stanford Project for Quantitative Research in Economic Development is aimed at using interindustry methods to explain the interrelated changes that accompany industrialization. A

¹ Discussion of unpublished work will necessarily be limited to research with which I have had personal contact, principally that of the Stanford Project for Quantitative Research in Economic Development.

study by Chenery, Shishido, and Watanabe [6], The Pattern of Japanese Growth, 1914-1954, attempts to trace the rapid increase in output of individual branches of industry to four sources: the changed composition of domestic demand; the substitution of domestic production for imports; variations in the level and composition of exports; and the combined effects of substitution and technological change. After the industrial structure of Japan had been estimated at three points separated by twenty-year intervals, a recent input-output model was used to compute the separate effects of the first three factors and, as a residual, the fourth. The results provide quantitative measures of the exogenous and induced elements suggested by Rostow; they also show that the growth of most sectors is due to a combination of several factors rather than to one main cause.

Another set of studies by the Stanford Project is aimed at the use of interindustry analysis to identify the elements of industrialization that are common to all countries. For this purpose, assumptions for interindustry models are being derived from a series of international comparisons of individual structural elements: consumption patterns [15], input-output coefficients [7], labor inputs [1], and the growth of production and imports in individual sectors [3]. From these elements, we are attempting to set up a model that will trace out the typical pattern of industrial growth that has been observed by Kuznets [16] and is measured in more detail in Chenery [3]. If successful, this type of model should have several uses:²

- 1. It will show the extent to which the typical process of industrialization depends on changes in trade patterns that normally accompany rising income as well as on the better-known changes in consumption patterns.
- 2. It should permit measurement of the differences between the growth pattern of a given country and the normal pattern and thus lead to investigations of the effects of market size, resource endowments, and other individual factors.
- 3. In connection with work on capital-labor substitution in individual sectors, an interindustry model makes possible the study of total factor intensities and their relation to differences in relative prices among countries having varying labor and capital costs.³

II. The Allocation of Resources

The use of interindustry analysis as a tool of development policy arises from the need to co-ordinate investment plans in interrelated sec-

Work along these lines is being done by Houthakker, Bickel, and Minhas.

Only preliminary tests of the data and method have been made so far. These are summarized in Watanabe [24].

tors of the economy. Earlier input-output projections, such as those for the United States [8], Italy [4], Holland [23], and Colombia [9], were designed primarily to test the consistency of investment programs and other policies that had already been established. In more recent research, illustrated by interindustry studies in Argentina [10], Peru [11], and Israel⁴ an effort is made to explore the range of development possibilities by making alternative assumptions as to growth rates, export markets, import substitution, foreign capital supplies, and other limiting factors. In this way, the policy-maker can be offered a set of consistent alternatives to choose from, in which the implications of each set of factors can be shown explicitly.

The next step in this line of development would logically be the application of formal methods of mathematical programming to the allocation problems of underdeveloped countries. So far, there have been only a few academic experiments in this direction. Frisch [12] has illustrated the uses of a long-run decision model based on mathematical programming, and Chenery and Kretschmer [5] have applied nonlinear programming to the choice between import-substitution and increased exports in a development program. Sandee [22] has also tested a linear programming model designed to determine the limitations to Indian economic growth.

The Stanford Project is using mathematical programming techniques to measure the quantitative significance of external economies and of the arguments for balanced or unbalanced growth.⁵ So far, it has been shown that external economies depend largely on the magnitude of internal economies of scale elsewhere in the economy and that under plausible assumptions they can have a substantial effect on investment decisions. This type of analysis may prove helpful in devising means of investment allocation which do not require completely centralized decisions when the market mechanism does not function properly.

As a by-product of these experiments with mathematical programming, some of the issues in the recent discussion of criteria for investment in underdeveloped countries are being clarified. The more complete programming models show the limited applicability of the various ratios of input to output which are usually suggested as a basis for investment decisions. The theoretical discussion has revealed the inadequacy of partial analysis for this type of problem; the practical application of the principles suggested will require some sort of interindustry analysis.

⁴In an unpublished study of the Research Department of the Bank of Israel.
⁵Hirschman [14] uses an interindustry framework for his discussion of backward and forward "linkages" and the advantages of unbalanced growth. Preliminary results of the Stanford work are given in Chenery [2] and Haldi [13].

III. Conclusions

The main results to date of the use of input-output analysis and mathematical programming in the study of economic development have been the clarification of concepts and an estimation of their quantitative significance. Notions such as "balanced growth," "leading sectors," "external economies," "backward linkage," etc., can only be made precise by the use of an interindustry model. The importance of these ideas depends on their quantitative significance rather than their logical validity, and this can only be established by empirical studies.

The use of interindustry analysis for development policy is still in an experimental stage. In no country that I know of has it been employed for a long enough period to provide a test of its practical value. What is most needed is the accumulation of input-output data over time and the more systematic exploitation of technological information, especially for new types of production. In the meantime, interindustry models can perform a useful function in demonstrating the limits to the choices available to policy-makers, making allowance for possible variation in the structural parameters of the model.

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DISCUSSION

ALBERT O. HIRSCHMAN: It is probably significant for the state of our concern with economic development that this session is dealing, not with concrete issues in development theory and policy, but with the kind of research that is presently being undertaken with the aim of probing into some of these issues. This is encouraging evidence that, while the stage of self-sustained growth may yet be some way off for many of the underdeveloped countries, the economics of development has firmly entered the era of foundation-supported maturity and prosperity. In fact, the papers presented here read somewhat like progress reports submitted to a foundation and requesting an extension of the original grant for two more years. In such situations, since the research that is being described has not yet been concluded, the authors are precluded by their scientific standards from telling you in advance the conclusions they are going to reach. On the other hand, they would like to reassure you that the ratio between research input and "insight" output is going to be a favorable one. The dilemma is resolved by giving you the merest glimpse, tantalizing and slightly mystifying, into the contribution to knowledge which the research, once completed, is likely to make.

It is no easy task, then, to discuss papers which hardly provide one with targets for agreement or criticism. I suppose that the best I can do is to appraise the importance of the questions that are being asked. This is generally a rather futile exercise because it means that I am asking others to desist from solving their problems and to join in solving the ones that interest me; nevertheless, let us go through with it.

Among our speakers, Professor Hagen has set himself the most ambitious task; namely, the elucidation of the causa causans of economic development which he identifies as a noneconomic phenomenon. In a way, it is a pity that the economists are so much in the forefront of this search, for I am sure that if the anthropologists or social psychologists were engaged in it with anything like our energy, they would long have despaired about tracing development to "purely" anthropological or psychological factors and would have made the discovery that the root cause of it all lies in the exciting terra incognita of economics!

Be that as it may, I have much sympathy for Hagen's valiant attempt to carry on interdisciplinary research within his own skull, since I for one had made a similar attempt—or at least so I thought until Hagen so trenchantly dismissed his colleagues' endeavors in this field. My doubts about his procedure can be summarized briefly in two points. In the first place, with his accent wholly on creativity, intergroup tension, and rebellion, he underrates in my opinion the importance of what I have called the "co-operative component of entrepreneurship." I should like to refer him to recent research of Banfield and Silcock which shows, respectively, that backwardness may be rooted in the inability to co-operate rather than in the unwillingness to dis-

agree and that development can be held back by an excess rather than a deficiency of aggressive entrepreneurship.

Second, I am skeptical of the thesis that economic development depends rigidly on the prior coming into existence of certain "values, needs, and world view" among a subgroup of the to-be-developed society. As Gerschenkron has shown, what is prerequisite in one setting is often put into place ex post in another. I have wondered for some time whether Hagen is giving enough attention to the possibility that in some countries the characteristics which he considers as primordial have not rather been induced by economic development itself. In any event, the peculiar difficulties which accompany economic development in many underdeveloped countries today are largely grounded in their insistence on undertaking development before any one set of preconditions has been realized; and interdisciplinary thinking and research can perhaps help us in perceiving how the peculiar path that development is likely to take depends on which values are duly present at the start of the process and which ones will have to be generated by the process itself.

This brings me to Professor Eckaus' paper on factor proportions. He is particularly chary of telling us anything about his own research results, but I have the impression that the underlying premise of his reasoning is throughout that Western industrial technology must be ill-suited for the underdeveloped countries because the factor availabilities are so different. It is just possible that the traditional model with the two homogenous factors—labor and capital—will lead us astray here. We must always consider the possibility that a given industrial process, while using up much capital and little labor, may nevertheless be indicated for an underdeveloped country because it requires a minimum of some third factor, e.g., organizational ability, which may be in even shorter supply than capital itself. Work on appropriate technology should have a very high priority, but I would think it unfortunate if the focus were entirely on the substitution of labor for capital. I would like to suggest an empirical question which may serve to change the focus slightly; namely, which are the processes and technologies used in underdeveloped countries by industries and firms that are endemically inefficient and rundown and unprogressive?

Professor Chenery's activities are, on the whole, so obviously useful that it is almost ungracious to direct attention to the problems he does not solve. But, since the discussant must discuss, I will say that I am not certain what guidance is provided by whatever "typical process of industrialization" Chenery may be able to identify. We all know that industrialization in the Soviet Union followed a sequence that is radically different from that in the many underdeveloped countries where it typically started with light consumer goods. Does it make much sense to "average" these two processes? I wonder whether a typology might not be more helpful.

I think, also, that input-output techniques have many important potential uses in the analysis of development, but wonder whether their principal contribution is in the area of general programming. Their triumph here would consist in identifying one sector whose expansion conditions the growth of the whole economy and of whose importance nobody is aware. Has this happened

and, more important, is it likely to happen? I rather doubt it, for a sector is ordinarily found to be lagging because of an unexpected spurt elsewhere in the economy or because of unexpected difficulties in carrying out planned or intended expansion rather than because of simple ignorance of interdependence relationships.

This point provides me with an easy transition to Professor Nicholls' paper. Today it is almost commonplace that progress in agriculture holds the key to continued growth in an increasing number of underdeveloped countries. When Kaldor joins forces with Viner, and Prebisch with Gudin, we have a wholly unusual degree of unanimity. The reason is of course that economic development outside of agriculture rather than input-output analysis has unequivocally unmasked agriculture as the laggard.

As Professor Nicholls shows, the newly recognized importance of agriculture serves to shift the emphasis from capital as the basic factor in development to such other agents of change as education, research, and institutional reform. But for me the most interesting part of his paper is the demonstration that industrial-urban development is the most potent contributor to agricultural progress. In view of his conclusive findings on this score, I wonder whether he is not unnecessarily constructing a vicious circle of his own by maintaining that the problems of inadequate food supply have to be met first. I am also a little worried about possible generalizations which others might draw from his and Tang's findings on the lack of interregional transmission of growth. It must be kept in mind that within the fairly small, contiguous and homogenous area studied by Nicholls and Tang, the polarization effects are bound to be more powerful than between two countries; and attempts to interfere with, and to reverse, these effects through fiscal or other public policies are much less likely to be pursued energetically and successfully.

Here we are approaching Professor Mason's territory: the role of government. His hypothesis that the speed and intensity of change has something to do with the extent of the role of government is plausible and consonant with contemporary experience; but I am not sure that it is entirely satisfactory. History provides us with many examples of perfectly static societies where government was virtually totalitarian: Wittfogel's "hydraulic society" is a convenient ideal type in this area. On the other hand, the industrial revolution in England was a period of rapid change and simultaneously declining role of the state. In accounting for the latter fact, Professor Mason adumbrates another possible, and I believe quite interesting, hypothesis: The powers of the state tend to be restricted when society's principal task is experimentation and discovery of the unknown (note the limited role of the state among the seafaring nations of Antiquity); they are strongest when society's real or imagined task is organization for, and achievement of, a predetermined target.

From this point of view, incidentally, the sooner the Soviets reach their predetermined goal of catching up with us the better; for thereafter *they* will have to do the experimenting and in the process, if our hypothesis is correct, the power of the Soviet state will go into eclipse. Since this is a fairly cheerful thought, I believe I should stop right here.

AMERICAN ECONOMIC ASSOCIATION

PROCEEDINGS

OF THE

SEVENTY-SECOND

ANNUAL

MEETING

WASHINGTON, D.C. DECEMBER 28-30, 1959

PROCEEDINGS OF THE AMERICAN ECONOMIC ASSOCIATION

ANNUAL BUSINESS MEETING, DECEMBER 30, 1959 SHERATON-PARK HOTEL, WASHINGTON, D.C.

The Seventy-second Annual Business Meeting of the Association was called to order in the Adams-Hamilton Room of the Sheraton-Park Hotel, 5:00 p.m., by President A. F. Burns. About seventy-five members were present. The order of business followed the brief outline prepared and distributed before the meeting. The minutes of the business meeting of December 29, 1958, were approved and the minutes of the Executive Committee meetings and the reports of officers and of committees of the Association were ratified.

The reports of the Secretary-Treasurer, the Finance Committee, and the Auditor were presented by J. W. Bell. Copies of financial statements, investment holdings, and the Auditor's Report were made available for inspection. Meeting plans for 1960-64 were summarized. Major activities in the Secretary's Office were described; e.g., matters pertaining to increasing our membership, enlarging our income from advertising in the Review and the Papers and Proceedings, and increasing our income by the use of our mailing list for commercial as well as educational purposes. The Secretary has received some criticism from members who objected to the "euphemistically" educational advertisements, to the distribution of grossly unscientific publications through the use of our mailing list, and to being badgered by the "Help Save Billing Costs" flier sent out with the bills for membership dues. The Secretary asked the indulgence of members on these several counts. Every effort is being made to balance our growing budget by increasing revenue and reducing costs, All who have read last year's report of the Committee on the Association Deficit should be impressed by the fact that members and subscribers are not paying their way and every feasible means must be utilized to balance the budget. If it were not for income received from our investment account, the Association would have suffered a deficit eleven out of the last fourteen years. This year, despite all our efforts to raise money from other sources, we again had to count on investment income to balance the budget. For this reason, the recommendation made last year that we initiate steps to raise membership dues and subscription rates was repeated. It is not too early to initiate steps in this direction. We can go on for another few years without an increase in dues if we continue to rely upon investment gains and drawing upon an accumulated unappropriated surplus; but this should not appeal to economists as a sound, long-run policy.

The Treasurer described the work of the Finance Committee and commented on the conscientious and effective manner in which its members—C. Wells Farnham, Chairman, and C. D. Anderson—have functioned during a hectic period in the market. Despite some profit taking, the investment holdings have appreciated in value. It is this appreciation which accounts for a rise in the accumulated unappropriated surplus from \$119,000 to \$129,000. He also indicated that the Auditor's Report by David Himmelblau & Co. represents an increasingly demanding job because of the growing volume and

complexity of our operations. Members were advised to read the Treasurer's Report in connection with the Auditor's Report in order to appreciate more fully the use made of the Association resources and the funds received from foundations for special purposes. The total footings of \$270,000 in the Auditor's Report includes about \$100,000 foundation funds already committed to specific use and hence should not be interpreted as being available for financing further Association activities.

The above reports were accepted, with a vote of thanks to the members of the Finance Committee and to the auditor.

The report of the Managing Editor of the American Economic Review was presented by B. F. Haley, who summarized the activities of the Editorial Office and of the Editorial Board. Professor Haley reviewed the contents of his report, which deals with the number of articles and communications received, classifies the contents of the Review by subject matter, by number of main articles, communications, reviews, and the like. He indicated that actual figures for 1959 exceeded the budget for that year and that the budget for 1960 would be further increased, this largely due to the increased printing, mailing, and production costs of bigger volumes and increased number of copies. The higher figures do not reflect the financing of survey articles by foundation funds.

In the absence of J. P. Miller, Chairman of the Committee on Research and Publications, and of C. C. Bloom, Acting Chairman of the Committee on Economic Education, the reports of these two committees were presented and excerpts were read by the Secretary. Activities of other committees were commented upon. Reports of the officers and of various committees and of our representatives on the ACLS, SSRC, NBER, and AAAS are given rather full treatment in the minutes of the Executive Committee meetings and formal reports are published in the "Proceedings," as follows:

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Report of the Secretary (page 664)
Report of the Treasurer (page 682)
Report of the Finance Committee (page 689)
Report of the Auditor (page 693)
Report of the Managing Editor (page 700)
Reports of the Committees:
  Research and Publications (page 704)
  Economic Education (page 705)
  Additional Awards to Younger Economists (page 707)
  Academic Freedom and Civil Liberties (page 713)
  Tudges for the Open Competition (page 715)
  Institute of International Education (page 716)
Reports of Representatives:
  ACLS (page 720)
  SSRC (page 722)
  NBER (page 724)
  AAAS (page 728)
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Award of John Bates Clark Medal. President Burns reviewed briefly the history of the AEA awards and called upon the Chairman of the Committee

on Honors and Awards to report on this year's award of the John Bates Clark honorary medal. Professor Clair Wilcox responded by announcing that the recipient of this award—the sixth member to be so honored—was Lawrence R. Klein. Professor Klein was presented and the medal was tendered him, with a citation. This citation is printed as an addendum to these minutes.

Report of the Committee on Elections. The Secretary presented the report of the Committee on Elections and the certification of the election of new officers for the year 1960 as follows:

In accordance with the bylaws on election procedure, I hereby certify the results of the recent balloting and present the reports of the Nominating Committee and the Committee on Elections

The Nominating Committee, consisting of John D. Black, Chairman, Alice E. Bourneuf, Raymond T. Bowman, James M. Buchanan, George Garvy, and Kenneth Roose, presented to the Secretary the list of nominees for the respective offices:

For President

Theodore W. Schultz

For First Vice-President

Paul A. Samuelson

For Vice-Presidents

Lester V. Chandler William J. Fellner Raymond W. Goldsmith Robert A. Gordon For Executive Committee

Armen A. Alchian John K. Galbraith Frank C. Pierson Ralph A. Young

The Committee on Elections, consisting of Harold F. Williamson, Chairman, Arnold C. Schumacher, and James Washington Bell, prepared biographical sketches of the candidates and ballots were distributed early in November. The canvass of ballots was made on December 16, 1959, and the results were filed with the Secretary.

From the report of the Committee on Elections, I have the following information:

Number of envelopes without names for identification	80
Number received too late	9
Number of defective ballots	
Number of legal ballots	3,583
Number of returns from the mail ballot	3,672

On the basis of the canvass of the votes cast, I certify that the following persons have been duly elected to the respective offices:

President (for a term of one year)
Theodore W. Schultz
First Vice-President (for a term of one year)
Paul A. Samuelson
Vice-Presidents (for a term of one year)
Lester V. Chandler
Robert A. Gordon
Members of the Executive Committee (for a term of three years)
John K. Galbraith
Ralph A. Young

Induction of the President-elect. The retiring president, A. F. Burns, presented the President-elect, T. W. Schultz, who was then inducted into office. Professor Schultz expressed his appreciation of the honor that was his in being elected to this office and the privilege of serving the profession in this capacity and asked co-operation of his associates and fellow members in making the coming year as successful as those preceding. He announced an innovation in the division of labor between the newly elected officers, indicating that the

First Vice-President, P. A. Samuelson, will be taking over the function of program making, thus leaving the President free to devote his efforts to other administrative matters, to policy making, and to the presidential address.

A call for any unfinished or new business brought forth comments from the floor. The question was raised as to whether the Association was doing anything about professional ethics or standards involving plagiarism or questionable practices in using or refusing manuscripts for publication. Professor Burns explained that such matters have been given attention and that a committee has been constituted to investigate the merits of complaints which have been or may be filed with the Association authorities. Another matter brought up on the floor was a proposal to increase the division of labor in the office of the Managing Editor of the *Review*, the proposal involving the establishment of a number of panels in subject-matter fields to aid the Editor in allocating review assignments and appraising manuscripts.

The report of the Committee on Resolutions was then read by Dean Powers:

Be it resolved that the Association express its sincere appreciation to everyone who has contributed to this most successful 72nd Annual Meeting. Specifically the Association is grateful to President Arthur F. Burns for his effective work in planning the program and for his thoughtful and impressive presidential address; James Washington Bell whom we are privileged to have as our knowledgeable Secretary-Treasurer; the members of the Executive Committee whose work is essential to the smooth operation of the Association; to all the speakers and discussants whose papers constitute the basic purpose for our meeting together; Raymond T. Bowman, who served so effectively as Chairman of the Joint Committee on Local Arrangements, and Ewan Clague, Cochairman for Economics, and their associates Jack N. Ciaccio, Edward T. Crowder, A. Ross Eckler, Dwight Gentry, Joseph P. Goldberg, Selma F. Goldsmith, Walter G. Keim, Lawrence R. Klein, Herbert Liebenson, Findlay Petrie, Thomas E. Murphy, Wilson E. Schmidt, Morris B. Ullman, Kenneth G. Van Auken, Jr., Harry Venneman, and Emmett H. Welch; the District of Columbia Employment Service staff for providing an important service; the members of the Press for their accurate and full reporting of meetings; the Washington Board of Trade for its help in planning and arranging the many details of the meetings; the other Allied Social Science Associations for their co-operation, and the management and staff of the Sheraton-Park Hotel who performed yeoman service in providing for the physical needs of our Association and its members.

Respectfully submitted,

LELAND J. GORDON, Chairman W. H. BAUGHN RICHARD POWERS

The meeting was adjourned at 6:00 p.m.

JAMES WASHINGTON BELL, Secretary

THE JOHN BATES CLARK AWARD

CITATION MADE BY CLAIR WILCOX, CHAIRMAN, COMMITTEE ON HONORS AND AWARDS, ON THE OCCASION OF CONFERRING THE MEDAL ON LAWRENCE R. KLEIN

The John Bates Clark medal is awarded every other year "to that American economist who is adjudged to have made a significant contribution to economic thought and knowledge." The recipients of this award are chosen by an electoral college consisting of the Association's Committee on Honors and Awards and its Executive Committee. To receive the award in 1959, the electoral college has chosen Professor Lawrence R. Klein, of the University of Pennsylvania. The long list of his works, consisting of threescore books and articles published over the last twelve years, testifies to Professor Klein's industry, his originality, the breadth of his interests, and the high quality of his scholarship. As an economist, he has insisted that theory be grounded in empirical fact. As an econometrician, he has succeeded in wedding theory to modern statistical technique. An interpreter of the Keynesian revolution, he has pioneered in extending the analysis empirically as well as theoretically. On behalf of the American Economic Association, I take pleasure in awarding the John Bates Clark medal to Lawrence R. Klein.

REPORT OF THE SECRETARY FOR THE YEAR 1959

The Executive Committee minutes are a record of official acts of the Association. Presented below are the minutes of the March and December, 1959, meetings. Following these minutes is a summary of the year's operations, with comments and interpretations concerning the Association's activities.

MINUTES OF THE EXECUTIVE COMMITTEE MEETINGS

1. Minutes of the spring meeting held in New York City, March 27-28,

The second meeting of the 1959 Executive Committee was held at Hotel Commodore, New York, New York, March 27-28, 1959. The following were present: A. F. Burns, presiding, and G. L. Bach, J. W. Bell, M. A. Copeland, Solomon Fabricant, B. F. Haley, A. L. Harris, L. G. Reynolds, G. W. Stocking, and Mabel F. Timlin. Absent were: K. E. Boulding, James Tobin, and E. E. Witte. Attending as members of the Nominating Committee were: J. D. Black, Chairman, Alice E. Bourneuf, R. T. Bowman, J. M. Buchanan, George Garvy, and Kenneth Roose. Attending as guests were: Roy Blough, Gottfried Haberler, B. W. Lewis, J. P. Miller, W. L. Thorp, William Vickrey, Paul Webbink, and Clair Wilcox.

1. President's Remarks (A. F. Burns). The President announced the membership, so far as appointments had been made, of several committees; e.g., Committee on Local Arrangements, Committee on the Papers and Proceedings, and the Committee on the Secretary Successorship.

2. Minutes. The minutes of the December 26 and 29, 1958, Executive Committee meet-

ings were reviewed, as presented in page proof, and approved as corrected.

3. Report of the Secretary (J. W. Bell). Registration, arrangements, operation of the employment register, and the financial results of the Chicago meeting were reviewed. The Association's share of the surplus income amounted to nearly \$4,400. Arrangements for the Washington meeting were briefly discussed. Changes in the composition and number of members were reported. A number of matters concerning office operations were taken up, such as applications for exchange advertisements, proposals to reprint back numbers of the American Economic Review, printing estimates from publishers compared to Banta

The size and cost of the Papers and Proceedings volume will again be large this year some 675 pages, despite the target of 500 pages. Pertinent facts will be called to the attention of the ad hoc Committee on the Papers and Proceedings. The revision of the information booklet has been printed (1,000 copies). The size of the advertising section in the March, 1959, American Economic Review has been somewhat increased.

Permissions to reprint were reported.

The use of the mailing list privilege has been greatly liberalized. More permissions have been granted this year than previously and instead of an expense, this item has become a source of increasing income. We use our mailing list at least five times a year to send out publications and twice for ballots and dues bills.

A communication from the American Political Science Association was read, informing the AEA of tentative ideas about a National Academy of Social Sciences and inviting the AEA to send a representative to discuss this and related proposals. The Executive Committee authorized the President to request Fritz Machlup to attend this meeting as an

observer and to report to the Committee.

4. Report of the Treasurer and the Finance Committee (J. W. Bell). A detailed review of the financial condition and the income and expense accounts was presented and the budget estimate gone over, item by item. Attention was called to changes in certain income items—particularly advertising and the use of the mailing list; also to the unexpectedly large surplus received from the distribution to participating associations at the Palmer House. These items promise to offset the larger part of the anticipated operating loss indicated in the budget figures. Changes in the market value of our securities also indicate possibilities of profit taking which could more than wipe out the anticipated deficit if our present operations continue as planned. It was suggested that a footnote be added to the income and expense table, qualifying the deficit figure by referring to these considerations. The status of our bank balances and of the funds, i.e., travel grant, cumulative index, and register of economists, was reported. Copies of the report of the Finance Committee were passed around for inspection.

In connection with the budget figures, the recommendations of the Committee on the Association Deficit, and the appointment of an ad hoc Committee on the Papers and Proceedings, the Treasurer proposed that a straw ballot be authorized as suggested in the Treasurer's Report to obtain an expression of opinion from the members of the Association concerning publications and dues. The matter was referred to the Committee on the Papers and Proceedings.

5. Report of the Managing Editor (B. F. Haley). Professor Haley presented regular replacements on the Editorial Board and all names were acceptable to the Executive Committee. The final panel is to be presented to the Executive Committee at the December

meeting

Progress was reported on the preparation and publication of the economic survey articles. The first, of eight articles, by Herbert Simon, will soon appear. Four others have been assigned (to Robert Dorfman, H. Chenery, James Tobin, and Paul Samuelson and Robert Solow). It is proposed that these articles, together with those sponsored by the Royal Economic Society, eventually be published in book form. Such a volume might also include the four articles sponsored by the Econometric Society.

6. Reports of Standing and Special Committees.

oa) Committee on Research and Publications, Cumulative Index Project, and Promotion of Knowledge of Foreign Contributions (J. P. Miller). Professor Miller reported that the Readings on the Economics of Taxation, edited by Richard A. Musgrave and Carl Shoup, had recently come off the press. He read a letter from Dr. P. Hennipman, reviewing the commitments made by the several sponsors of the three-volume work on the letters of Leon Walras. The AEA commitment, made December, 1957, amounts to \$2,500 (see

page 615 of the May, 1957, Papers and Proceedings).

A cost-revenue report on the cumulative index of economic journals was presented. The Ford Foundation has made a supplemental grant of \$14,000 to their original grant of \$35,000 to cover editorial costs. The AEA has made a \$6,500 commitment. The estimates of sales at assumed prices, based on varying number of sets printed, were discussed in the light of elasticity of demand and multiple-choice considerations. The first volume should be ready for the press in the fall of 1959. Hence arrangements must soon be made for publication and for prepublication announcement of subscription prices. Professor Miller contemplates reviewing our "Readings" and "Survey" series contract with Richard D. Irwin, Inc., in connection with the discussion with Irwin concerning the publication of the cumulative index volumes. This proposal was approved.

The bibliography of bibliographies project, which has languished for some time, will not

materialize.

Two other projects were considered. The first was a series of surveys of significant economic research being done in foreign countries (a matter proposed at the December meeting). The program would be administered by an individual appointed by the President, working with an advisory committee, in close touch with B. F. Haley on an experimental basis for five years, at a cost of \$35,000 to \$40,000. It was VOTED to authorize the President to seek funds for an experimental program of surveys of economic research in foreign countries, to be conducted by American scholars.

The second project was the proposal for the translation of foreign economic classics and other works of major significance, also discussed at the December meeting, 1958. It was VOTED that the President be authorized to seek funds for the translation of foreign economic classics and other economic volumes of major significance in the amount of \$25,000 to provide a revolving fund which would enable the AEA to promote translations, the project to be administered by the Committee on Research and Publications.

6b) Committee on Economic Education (B. W. Lewis). Professor Lewis recommended that the AEA send representatives C. C. Bloom and Paul Olson to the NEA educational conference to be held this year at Lawrence, Kansas (last year it was at Bowling Green).

It was VOTED to approve this recommendation.

Professor Lewis presented a written report, describing the status of the secondary school social sciences textbook project (Paul Olson, Director) and the collaborative study of the secondary school curriculum under the joint auspices of the ACLS, SSRC, and with the

co-operation of the National Council for the Social Studies. It was VOTED to authorize the President, on recommendation of the Chairman of the Committee, to approve the participation of the Association (without financial commitment) in such a co-operative project.

It was VOTED to broaden the Committee's field of activity to include the teaching of

economics at the college and university level. (See Detroit, 1954, minutes.)

The economic education register of economists has been compiled from the 1956 Handbook questionnaire and is available for use.

It was VOTED to appropriate an additional \$400 (making a total of \$600) to defray travel and other necessary expenses of this Committee.

6c) Committee on Honors and Awards (Clair Wilcox). The names of nominees for the John Bates Clark award, to be given at the December, 1959, annual meeting, were presented by Professor Wilcox. After discussion, a vote was taken and the result will be

announced in December.

- 6d) Committee on Additional Awards to Younger Economists (M. A. Copeland). The work of this Committee was reported by Professor Copeland. A questionnaire, differing in some particulars from the one presented at the December meeting, will be sent out to a selected sample of members and the results will be reported later. The Secretary was instructed not to publish the December version of the questionnaire in the Papers and Proceedings.
- 6e) Committee on Academic Freedom and Civil Liberties (Fritz Machlup). There was nothing to report on the part of this Committee. The term of Howard R. Bowen expired in 1958 and a successor is to be appointed for a three-year term.

6f) Committee on Association Deficit (S. E. Leland). There was nothing further to re-

port on the activities of this Committee.

- 6g) Ad Hoc Committee on the Papers and Proceedings (Roy Blough). This Committee had just been constituted and Professor Blough reported that Milton Friedman and three others were to be on the Committee with him. It was VOTED to appropriate \$250 for the use of this Committee.
- 6h) Nominating Committee (J. D. Black). On the evening of March 27, the Executive and Nominating Committees met as an electoral college. Nominees were presented for President and First Vice-President for 1960. After discussion, one nominee for each position was selected and their consent was obtained. Nominations for the other offices were also discussed.

7. Miscellaneous Reports.

- 7a) International Economic Association (Gottfried Haberler). Professor Haberler reported on the 1958 Conference on Capital Theory at Corfu and announced that the 1959 conference will be held in Copenhagen, Denmark, and will be organized by Eric Lindahl. He reviewed the history of the IEA and the prominent part taken by the AEA in its foundation and early development. The activities of the IEA include not only the annual conferences and periodic congresses and the meetings of the Council but also refresher conferences conducted by prominent economists for native economists in scattered areas. The proceedings of the conferences are published. The International Economic Papers are financed by UNESCO. Translations volumes have been started and other projects are under way. The IEA receives income of some \$3,500 from association members dues and about \$3,000 from the sale of its publications. The AEA has contributed \$400, or double dues, since its foundation in 1948. The major portion of its \$34,000-\$35,000 expenses per annum (1959 budget was \$40,000) comes from UNESCO, the Ford Foundation, and other government and private sources. Some of these grants have terminated or are running out. Professor Haberler urged that the AEA continue its support of the IEA and it was suggested that a committee be appointed to review the activities of the IEA and report at the December meeting. No action was taken on this proposal. It was VOTED that (a) the Executive Committee go on record as approving the IEA application for funds which would enable it to continue its activities and further develop its work along useful lines and (b) the Executive Committee advise and guide the AEA representatives on the IEA Council on these matters in order to maintain a close liaison and thus co-ordinate the work of the two associations. (See, also, 8a.)
- 7b) Judges for the Open Competition (William Fellner). The papers presented in the 1959 open competition will be handled by the same Committee as in 1958, except for the replacement for Tony Tang. Announcement of the procedure was made in the March issue of the Review.
- 7c) Foreign Honorary Members. The bylaws provide for not more than twenty-five honorary members. At the present time, there are only fourteen names on the list. It was

felt that names should be added and it was VOTED to refer the matter to the Nominating Committee, with the request that the Committee propose several additional names from which one or more can be selected at any one time.

8. Reports of Representatives.

8a) ÂCLS (F. Ĥ. Knight). Professor Knight was not able to be present and no report was made. An inquiry from the ACLS concerning international congresses to be held in the U.S. prompted Professor Haberler to suggest the AEA explore with the IEA the possibility of holding an international congress in the U.S.

8b) SSRC (W. H. Nicholls). A letter from R. A. Gordon was read, calling attention to a conference on economic instability, to be held at Ann Arbor, Michigan, in June. Professor Nicholls' term expires in December, 1959, and it was VOTED to recommend his reap-

pointment for another three-year term.

8c) NBER (W. L. Thorp). There were no major developments since a report was sub-

mitted for publication in the 1958 "Proceedings."

8d) AAAS (W. S. Vickrey). Professor Vickrey gave an account of the AAAS meetings of Section K in Washington at Christmas time, in which Professors K. E. Boulding, Gale Johnson, and J. J. Spengler participated. An excerpt from Professor Boulding's letter was read, indicating his conviction that Section K presents an opportunity for the AEA to present its work to the general body of scientists and calling attention to the inadequate and ineffective representation of economists, e.g., National Academy of Economics and Political Science, to the AAAS. Professor Vickrey spoke to this subject and also described some of the high lights of AAAS activities; e.g., geophysical year, travel visas to scientists, National Defense Educational Act, Basic Research Conference, mathematical training program of the National Science Foundation and the AAAS. Another report was distributed. 9. Unfinished and Miscellaneous Business.

9a) Annual Meetings. It was VOTED to hold the 1962 meeting in Pittsburgh if facilities are adequate and available and the 1963 in Boston. The 1964 meeting will be held in Chicago, with headquarters at the Conrad Hilton, but it was decided to make the dates December 27-29 instead of 28-30 in order to be able to use the Palmer House meeting rooms if

necessary.

9b) Asia Foundation Fund. Only one small stissidy was made to enable a foreign economist to attend and participate in the 1958 are ual meeting. It was suggested that this \$2,500 fund be used to aid Asiatic scholars in the country to participate in the meetings and activities of the AEA and that it would be propriate use of these funds to secure new foreign members taking advanced degrees in American universities. The matter was

left in the hands of the Secretary.

- 9c) International Cooperation Administration. Th Secretary reported that out of about 150 invitations sent to names of foreign economists submitted by the ICA, 64 have become members. The ICA is interested in receiving AEA co-operation in recruiting qualified American economists for key positions on economic missions abroad. The problem was discussed at the round table session on "The Market for Economists: Demand and Supply Aspects," a digest of which is published in the May, 1959, Papers and Proceedings. A "List of Universities with Graduate Programs," etc., prepared by the Secretary, was distributed for the information of members. This matter was left in the hands of the Secretary.
 - 10. New Business.
- 10a) Instructions to the Committee on the Papers and Proceedings. On recommendation of the Committee on Association Deficit, a committee is being constituted to report on the scheduling and financing of the Papers and Proceedings. Roy Blough (Chairman) discussed this wide assignment and asked for suggestions; e.g., the nature of the criticisms of the Papers and Proceedings; program and publication expenses; what alternative contributions could be made at the same expense; effects on program by publishing elsewhere, in other ways, or not publishing at all. The Secretary-Treasurer's suggestion that a straw ballot be taken by the membership (see Treasurer's Report) was referred to this Committee for consideration.

10b) Committee on Secretary Successorship. A Committee, consisting of A. F. Burns,

Chairman, M. A. Copeland and G. W. Stocking, has been appointed.

- 10c Use of Carnegie Travel Fund. An application for travel aid to attend an international conference called for a revision of the procedure described in the Committee report. It was VOTED to appoint a standing committee, consisting of the President and the Secretary-Treasurer and two members selected from the Executive Committee. The appointed members will serve for two years, except that for the first year Solomon Fabricant will serve for one year and Lloyd G. Reynolds for two.
 - 10d) Profession of Economist. The recognition of the economist as a professional man

compared with the statistician, accountant, lawyer, doctor, engineer, may be of considerable importance to practitioners. This subject has been broached on several occasions previously—especially in anticipation of income tax dates. The Secretary was asked in reply to communications received on this subject to ask the writers for further information and suggestions as to what to do to improve the status of the economist.

10e) Advisory Committee to the Bureau of the Census. A letter from Robert W. Burgess, Director of the Bureau of the Census, was read by Solomon Fabricant, suggesting that the availability of a group of economists representing the AEA would serve a useful purpose and the appointment of such a committee was authorized.

10f) Progress Report on the 1959 Program (A. F. Burns). The balance of the session was devoted to a preview of the program. Not only were the broad outlines of the eighteen projected sessions clearly delineated, but many assignments of papers had already been made.

The meeting adjourned after luncheon.

2. Minutes of the Christmas meetings held in Washington, D.C., December 27 and 30, 1959:

The third meeting of the 1959 Executive Committee was called to order at 6:30 p.m., December 27, A. F. Burns presiding. Others present were: G. L. Bach, J. W. Bell, K. E. Boulding, M. A. Copeland, Solomon Fabricant, B. F. Haley, A. L. Harris, L. G. Reynolds, G. W. Stocking, Mabel F. Timlin, James Tobin, and E. E. Witte. Present as guests were: Roy Blough, L. V. Chandler, R. A. Gordon, Fritz Machlup, W. H. Nicholls, P. A. Samuelson, T. W. Schultz, W. L. Thorp, and D. M. Wright.

The first meeting of the 1960 Executive Committee was held on December 30 at 6:00 p.m., T. W. Schultz presiding. Present were: G. L. Bach, J. W. Bell, A. F. Burns, L. V. Chandler, M. A. Copeland, R. A. Gordon, B. F. Haley, A. L. Harris, P. A. Samuelson, G. W. Stocking, Mabel F. Timlin, James Tobin, and R. A. Young. Absent was: J. K. Galbraith. Present as guests were: K. E. Boulding, F. H. Knight, Fritz Machlup, and E. E. Witte.

- 1. President's Remarks (A. F. Burns and T. W. Schultz). At the first meeting, Professor Burns presented a summary report of his activities during the year, which involved appointments made to committees, problems raised by our accepting foundation grants and the need of setting up certain administrative safeguards. He commented on the problems of program construction, indicated that he had tried to carry out a rule of calling upon participants no more than once. He expressed regret that the papers for the open competition did not warrant even one session. He described the character of research sessions and again raised the question of inviting Soviet Russian economists to participate in future meetings. He reviewed the events calling for the appointment of a committee on professional ethics. The matter was fully discussed and the following resolution was passed: That the President appoint, for a period of two years, a Committee on Professional Ethics to which he may refer specific problems as he deems appropriate; and that a sum not to exceed \$500 be made available to the Committee to handle whatever costs may be incurred. To give effect to this resolution, the following members were appointed: Robert D. Calkins, Chairman, Richard Ruggles, and Joseph Dorfman.
- Minutes. The minutes of the March 27-28, 1959, meeting, held at Hotel Commodore, New York City, were approved as presented in mimeographed form.
- 3. Report of the Secretary (J. W. Bell). The operations of the local arrangements committee, though fairly standardized, seem to be growing more and more complicated, but under the management of R. T. Bowman and Ewan Clague the work of handling the room assignments, the joint program, exhibits, the employment register, special events, and other matters was done without calling in the assistance of professionals. Homer Jones, Chairman of the Committee on Local Arrangements for the December meeting in St. Louis, attended the Washington meetings, with some of his associates, conferred with local arrangements personnel, and witnessed operations.

Membership growth and composition are shown in Exhibit II. The increase of 970 members and 200 subscribers reflects a membership promotion which preoccupied much of the time of the Secretary's Office during the summer months. Seven association and publishers' lists were processed, totaling over fifteen thousand names, about two-thirds of which were not members of the AEA. Letters were also sent out to about 450 Asiatic students taking graduate work in the colleges and universities in this country. Through the courtesy of the Asia Foundation, we were able to offer a year's membership free or at half price to those interested.

The membership promotion made the issue of a 1958 supplement to the 1956 Handbook

impracticable. It has not yet been decided whether the next issue of the directory or handbook will be names and addresses only or of the "who's who" variety.

Matters pertaining to the American Economic Review and the Papers and Proceedings were presented but time did not permit discussion of reports on the size of printing, inventory, the question of replacements of out-of-print numbers, and contracts sought by reprint concerns; nor did we have time to review the record of permissions to reprint, applications for which are increasing rapidly. The Papers and Proceedings will again bulk large this year, despite all efforts to keep the size down to wieldy proportions.

A special report was submitted on advertising and a new rate card, effective January 1, 1960, was exhibited. Some 8,000 copies of the information booklet were printed this year. Most of these were used in connection with the membership drive. The report from Richard D. Irwin, Inc., on the "Readings," "Translation," and "Survey" series was submitted but not discussed, nor were publication costs obtained from other printers; e.g., Boyd Printing Company, Albany, New York; Interstate Printers and Publishers, Danville, Illinois; nor was the proposal to have our printing done abroad discussed.

Registration of the AEA as an eleemosynary organization raising funds in New York State was discussed but no action was taken and the matter was left in the hands of the

Secretary.

4. Report of the Treasurer, Finance Committee, and Auditor (J. W. Bell). The financial results of the year were summarized. Copies of the balance sheet, income and expense statement, investment holdings, and Auditor's Report were distributed or made available for inspection. It was reported that although expenses increased moderately, income increased even more and operations resulted in a net income of \$9,785 before deducting \$4,000 accrued liability for directory or handbook. This net income compares with a figure of \$5,619 for last year (a deficit of \$6,180 had been anticipated). The explanation of these favorable results is found chiefly in the increases in the following income items: (1) dues and subscriptions (reflecting in part the results of the membership promotion); (2) advertising revenue (which will be further enlarged with the introduction of a new rate scale in January); (3) sale of our mailing list; (4) an especially large net surplus from the annual meetings; and (5) investment income (including interest received on investments of foundation funds not yet put to use, as well as about \$7,500 profit from sale of securities).

From the income and expense account, one can note that total expenses of \$108,000 are in excess of the \$105,000 received from dues and publication income and that this year again we would have had a deficit had it not been for profits drawn from the investment account. The budget for 1959 projected an operating loss which was roughly equal to the unforeseen income from investments. Since we cannot count on a favorable market, the Treasurer repeated the recommendation made in last year's report that we now consider allocating some of the increased costs of operation on our members and subscribers.

The Treasurer submitted the report of the Finance Committee, showing an analysis of our investment holdings and purchases and sales made during the year. Special attention was called to the foundation funds not yet allocated to the purposes for which they have been remitted. About \$100,000 of such funds appear in the Finance Committee report as temporary operating funds.

Upon the approval of the report of the Finance Committee, the reappointment of C. Welles Farnham and Corliss D. Anderson was VOTED and the Secretary was instructed to write a letter of appreciation to these members for their valued services.

A similar VOTE of thanks was asked with respect to the Auditor's Report and appre-

ciation expressed to David Himmelblau & Co.

5. Report of the Managing Editor (B. F. Haley). The report submitted for publication was summarized and explanations given for the increased size, contents, budget of the AER and the survey articles financed by the Rockefeller Foundation grant. Names were suggested to fill vacancies on the Editorial Board. It was VOTED to approve the appointment of M. W. Reder, Tibor Scitovsky, and Robert Solow for three-year terms on the Editorial Board. It was VOTED to approve the 1960 budget. Professor Haley projected long-run plans for the organization of the Managing Editor's functions. He suggested that the responsibility of this office might be divided into functions performed by a managing editor and those performed by a book review editor and that this division might logically go into effect at the end of his term, December, 1961.

At one point of the proceedings, the Managing Editor and the Secretary-Treasurer were asked to leave the room, during which time the following motion was carried: that the salaries of the Secretary-Treasurer of the Association and the Managing Editor of the Review be increased to \$6,000 per year, effective January 1. It was VOTED to approve an increase of 5 per cent (to \$6,300) in the salaries of Miss Gertrude Tait and Miss Doris

Merriam.

6. Reports of Standing and Special Committees.

6a) Committee on Research and Publications (J. P. Miller). In the absence of the Chairman, the Secretary read the one-page report summarizing the activities of this Committee, which included the following items: (1) the "Readings Series" (Volume X, On Economic Development, still in process); (2) the "Translation Series" (progress is being made on Jaffe's life and works of Walras); (3) the cumulative index project (classification soon to be completed and the first volume to be published by summer); (4) the subcommittee on surveys of foreign economic research is being organized, with G. H. Hildebrand as chairman; and (5) translation of foreign classics project (not yet implemented).

The receipt of the Ford Foundation grant of \$65,000 for the last two projects was re-

ported, as was the status of the \$35,000 grant for the cumulative index project, plus the

supplementary grant of \$14,000.

A combined statement of net profit or loss and revenue and expenses for the period May through November, 1959, for the "Readings," "Survey," and "Translation" series volumes published by Richard D. Irwin, Inc., was made available for inspection. The account still shows a deficit for these publication ventures but with inventory on hand sales could clear the way for profit figures.

6b) Committee on Economic Education (C. C. Bloom). A brief report received from C. C. Bloom, Acting Chairman in the absence of B. W. Lewis abroad, outlined the two main projects being undertaken by this Committee: one, the study of textbooks in secondary courses in American history, social problems, and economics, and the other, a co-operative study of the state of the social sciences in the secondary schools. The Committee asked that a session on economic education be scheduled for our 1960 meetings.

The register of economists in economic education compiled from the 1956 Handbook questionnaires has been revised and use is being made of this list by the Joint Council on Economic Education. We have also had occasion to sell this list to General Electric for

educational purposes.

6c) Committee on Honors and Awards (Clair Wilcox). No report due; none made. Will

submit a report at the spring meeting.

6d) Committee on Additional Awards to Younger Economists (M. A. Copeland). The report, together with the results of two questionnaire surveys, was submitted but not discussed. The matter was postponed to the spring meeting, when it will be presented by Harold Somers, since Morris Copeland expects to be absent abroad at that time, (Report published below.)

6e) Committee on Academic Freedom and Civil Liberties (Fritz Machlup). The report

was submitted and read by Fritz Machlup. (Report published below.)
6f) Committee on Association Deficit (S. E. Leland). The Committee had received no further instructions and had no report to submit. It asks if it should prepare a sequel to last year's report in the light of this year's financial results or whether it should be discharged.

6g) Committee on the Papers and Proceedings (Roy Blough). An oral report was presented, to the effect that the Committee found the Papers and Proceedings to be a well-prepared and useful volume and that this view seemed to be widely shared. It was recognized that from time to time inferior papers have been presented and published, but the volume in general was believed to be valuable as a source of material for academic use, as a readily available compendium of the economic thinking of the time, and as an incentive to participants to apply their best efforts to the preparation of their papers for the meetings. Further investigation would involve examination of possible methods of making the Papers and Proceedings more useful and of increasing the sale of the volume, as well as appraisal of such loss of values as might be expected to ensue if various possible money-saving alternatives were put into effect. It was contemplated that as a basis for such examination inquiries would be directed to larger samples of our members.

6h) Committee on the Secretary-Treasurer Successorship (A. F. Burns). Professor Copeland found it necessary to resign and the committee was reconstituted to include T. W. Schultz and P. A. Samuelson. One meeting was held; the results were not made public.

6i) Committee on Travel Grants (L. G. Reynolds). Only two grants were made this year: one to Gottfried Haberler to attend the IEA meetings in Elsinore, Denmark, and the other to W. F. Stolper to attend the Sixth European Conference of the International Association for Research in Income and Wealth in Yugoslavia. A third grant, to Mary E. Murphy, to attend the Paris meeting of the Institute of Management Science and the Second International Savings and Investments Congress in Brussels, was canceled on account of illness. Two applications have been approved for attendance at the International Historical Congress in Stockholm in 1960: H. F. Williamson and W. N. Parker. A report on the use of this fund was sent to the Carnegie Corporation in November, 1959. (The standing committee administering this fund consists of the President, the Secretary-Treasurer, and two members selected from the Excutive Committee.)

- 6j) Committee on Foreign Honorary Members. This Committee became defunct in 1956 and since then no formal steps have been taken to appoint new members or make replacements in the list of twenty-five foreign honorary members authorized by our bylaws. Action has since been taken to authorize the Nominating Committee to suggest names for consideration by the Executive Committee.
- 6k) Committee of Judges for the Open Competition (W. J. Fellner). In the absence of W. J. Fellner, L. G. Reynolds made an informal report and Fellner's letter to President Burns, supplementing the Committee report, was read. In substance, the present Committee does not favor continuing the open competition. Experience of preceding years is inconclusive and their recommendation is to discontinue the experiment. Many suggestions were proposed, such as inviting contributed papers on a given topic, establishing a network of inquiry to spot likely individuals to submit papers, to conduct open sessions but not publish papers, and so forth. These views were expressed for the new President to consider. No other action was taken on the report nor was the Committee discharged. The letter written by J. W. McKie, Secretary of the Committee of Judges for the Open Competition, and that written by the Chairman, W. J. Fellner, to supplement the McKie letter, are not published as part of this report.
- 61) Nominating Committee (G. W. Stocking). A panel of names of prospective members of the Nominating Committee was submitted for discussion and the Chairman indicated that the Committee would be duly constituted and prepared to present a slate of nominees for next year's officers at the spring meeting. He also asked that members submit suggestions of names of foreign economists who might appropriately fill vacancies on our present list of honorary members.

7. Miscellaneous Reports.

7a) International Economic Association (H. S. Ellis and Gottfried Haberler). The Secretary submitted letters from H. S. Ellis and Gottfried Haberler, reporting informally the activities of the IEA and in particular the round table session on inflation held September 2-10, 1959, at Elsinore, Denmark. There will be a meeting in 1960 of the IEA Council and a round table session and plans are being discussed for a congress such as the one last held at Rome in 1956 for 1962, presumably in Vienna. A more complete report will be submitted by our representatives at the spring meeting.

It was VOTED to confirm payment of double dues-\$400—to the IEA again next year (1960).

7b) Institute of International Education Advisory and Policy Board Representatives (Theodore Morgan). In the absence of Theodore Morgan, who was abroad, T. W. Schultz reported informally on the activities of the Economics Institutes for foreign students and referred to a more formal report submitted at the dinner meeting of the chairmen of economics departments (the group that initiated the idea of this institute). B. F. Haley called attention to a note to be published in the March, 1960, issue of the American Economic Review announcing the Third Economics Institute, to be held at the University of Colorado, June 27 to August 28, 1960, Wyn F. Owen, Director.

A summary of Professor Owen's report, "The Economics Institute: An Experiment in Graduate Education," is published with the reports below.

7c) Asia Foundation Grant. This fund, amounting to \$2,500, has been used to help finance attendance at the annual meetings and also to enable Asiatic students and economists in this country to become members or subscribers on a complimentary or half-rate basis. The number of graduate students applying for funds after the publication of the announcement prompted us to limit subsidies this year to \$100 per person.

Informal reports have been submitted to the Asia Foundation from time to time.

- 7d) UNESCO (C. B. Hoover). A letter from Professor Hoover indicates that no meetings have been called and that he has nothing to report.
- 7e) Conference on Recognition of the Social Sciences (Fritz Machlup). A letter from Professor Machlup to the President (copy to the Secretary) is on file which describes the proposals made at the Washington meeting held April 9, 1959.
 - 8. Reports of Representatives.
 - 8a) ACLS (F. H. Knight).
 - 8b) SSRC (W. H. Nicholls).
 - 8c) NBER (W. L. Thorp). 8d) AAAS (W. S. Vickrey).

Formal reports were received from F. H. Knight and W. H. Nicholls. The others were promised for publication and presentation at the spring meeting.

The mail ballot cosponsoring the AAAS Section K session on population growth was ratified.

9. Unfinished and Miscellaneous Business.

9a) Annual Meeting Schedule. It was VOTED to choose the Penn-Sheraton Hotel as con-

vention headquarters for the annual meeting in Pittsburgh, 1962.

9b) Bureau of the Census Advisory Committee. The appointment of such a committee was authorized at the March, 1959, meeting. At the suggestion of Solomon Fabricant, the following resolution was passed:

The Executive Committee of the AEA believes that it would be highly desirable for economists as a group to be able to advise the Bureau of the Census through a formal AEA Advisory Committee to the Bureau of the Census. It is therefore resolved that such a Committee be set up, in accord with the motion passed during the meeting of March 27-28, 1959; that the President of the Association is authorized to appoint the Committee; that the Committee may, with the approval of the President, co-opt additional members as are needed, to deal with specific requests by the Bureau of the Census for advice on particular questions.

9c) Program Preview. The balance of the meeting was devoted to the discussion of the program for 1960. After a preliminary explanation by President T. W. Schultz, Vice-President P. A. Samuelson outlined a number of topics which might form the nucleus of a program devoted to the grand theme of frontiers of economic knowledge. A number of suggestions were made and informal discussion continued long after adjournment.

The meeting adjourned at 9:30 p.m., to be reconvened in New York City, March 25-26,

1960.

ACTIVITIES AND OPERATIONS

Annual Meetings. Registration of the twelve associations meeting jointly at the Sheraton-Park and the Shoreham Hotels exceeded 5,500 members. Of these, some 2,800 were members of the AEA. Hotel facilities were taxed to the limit and accommodations for the overflow had to be found at other hotels. Although this meeting was planned chiefly to enable the AEA and the ASA to arrange a program of mutual interest, many allied associations decided to meet with us, with the result that this meeting was not unlike the every-third-year, all-out joint meetings.

Plans for future meetings are as follows: 1960, St. Louis, Chase-Park Plaza Hotels; 1961, New York City, Hotel Commodore; 1962, Pittsburgh, Penn-Sheraton Hotel; 1963, Boston, headquarters not yet selected; and 1964, Chicago, Conrad Hilton Hotel.

Membership. Exhibit II presents an analysis of membership. During the past year, our membership has increased 970, subscribers 200, or a total of 1,170. This last figure compares with 756 in 1958, 507 in 1957, 1,067 in the Handbook year of 1956, and about 200 per year on the average from 1950 to 1955. This favorable growth was not achieved without effort. Indeed, a minor membership drive was promoted during the summer months. The Committee on Association Deficit suggested this as one of the ways to increase our income, and the promotion was undertaken instead of preparing the 1958-59 supplement to the 1956 Handbook (thus reducing expense and increasing income). But the membership drive was not costless; it involved the processing of publishers' and association lists and checking these names against our membership and against each other. It was found that only one out of three of these names were already members of the AEA. Some ten thousand notices, most of them with information booklets, were sent to these prospects. The returns, though seemingly small (about 4 or 5 per cent), are still coming in and if these new members prove to be permanent, we will be iustified in feeling that our growth (total 14,018) is sound and will supply a steady source of income and new strength to the Association. A complete analysis of cost and the result of this promotion has been made. *Publications*.

American Economic Review. The Managing Editor's report, published below, describes the size, contents of the Review (including the survey articles series), and budget, the operation of the Editor's Office, and the work of the Editorial Board. The photograph and biographical series of past officers of the Association has been completed (except for Frederick B. Hawley, not at present obtainable), and that of the current president is carried with the annual address in the March AER.

Vacancies and Applications Section. No change is contemplated in the publication of these announcements. This service continues to be useful and as a necessary complementary service to the employment register which we conduct at the annual meeting. The market for economists, supply and demand aspects, was explored at a round table session in last year's program. The desirability of a better organized market was made obvious there and the organization of a national clearing house for economists and other social scientists was given some support. Such a project, however, is a large undertaking, since it involves all sources of economist manpower; i.e., colleges and universities, business schools, institutions, training economists for public administration and foreign service, and all major institutional demands for formally trained economists, academic, business, and government. It would be a project appropriate for the combined efforts of all social science associations and the councils and even participation, perhaps, of other private organizations and of government agencies.

Papers and Proceedings. The size of this volume continues to present problems of control, both editorial and cost. These problems are being investigated by the Committee on the Papers and Proceedings, which was authorized at the spring, 1959, meeting of the Executive Committee, and record is made of their report in the minutes of these meetings.

Printing and handling costs of both the Review and the Papers and Proceedings have mounted in recent years, to such a degree, in fact, that the Committee on Association Deficit recommended that the contracts with our publishers be re-examined. This has been done and estimates have been obtained from several publishing companies. This material is available for submission to the Executive Committee. Inquiry has also been made as to the feasibility of having our printing done abroad. We have had experience with printing of one volume of the "Translation Series" in England—importing sheets and binding the volume here. Our preliminary judgment is that though printing costs are substantially lower than in this country (almost half), the problem of editing, handling, and mailing would make the shift cumbersome, time consuming, and uneconomical. We are continuing our inquiries with the publishers but are satisfied that for the time being, at least, our relations with George Banta Company and with Richard D. Irwin, Inc., are as satisfactory as we could get elsewhere. Our judgment is supported in the latter case by the fact that we are about to conclude an agreement with Richard D. Irwin to publish the five volumes of the cumulative index (a Committee on Research and Publications project).

Permission to Reprint and Translate. A complete analysis has been made of all requests received and granted: The purpose or use of the privilege—that is, to quote, paraphase, or use in toto or to translate—by author or by other parties; for articles in journals, books, readings, or other publications; for educational, class use, in own courses or for commercial publications. This privilege has been granted quite freely and usually without cost where it is thought that the influence of our publications can or should be extended. Token payments when offered have been passed on to the authors. Our policy may, however, have to be re-examined if the present trend of requests to reprint whole articles and papers continues to grow, especially if requests to reprint clusters of items in collections when these are readily accessible and compete with current numbers of our publications. We are in correspondence with editors of other economic journals who, we are informed, face the same situation.

Several inquiries have been received from reliable reprint corporations, asking contracts granting exclusive rights to reproduce by photo-offset back numbers or out-of-print or odd issues of our publications on a royalty basis. We already have an agreement covering the microfilming of the *AER* and we also have a fairly complete inventory and are able to replace out-of-print numbers at reasonably low prices by advertising in the *AER*. The problem of obtaining back numbers in the secondhand market has not yet become serious; hence it does not seem to warrant the use of expensive photo-offset processes (which cost some \$9.00 per number to reproduce). However, we are pursuing our investigations and are keeping in touch with these reprint concerns.

Use of the Mailing List and Advertising. In keeping with the recommendations of the Committee on Association Deficit, the Secretary's Office has granted permission for the use of the mailing list on a liberal scale but at a price. We effect a saving by doing our own mailing and frankly aim to make a profit on the sale of our mailing list to legitimate users. Requests are carefully screened and we grant only those that appear to have merit and value to enough of our members to justify an over-all mailing. We hope that members prone to criticize will appreciate advantages to be gained by this policy. Our address list cannot yet be classified by subject matter or interest. It is classified geographically only.

Advertising in the Review and the Papers and Proceedings as well as in the annual joint program is another source of revenue, and it should be useful, too, to those who need to keep abreast with announcements of new publications, and we run a long list of exchange ads to keep members informed of the contents of current economic journals, both here and abroad. So far we have confined our ads, with one exception, to publishers' ads, but the acceptance of commercial ads has been recommended by the Committee on the Association Deficit, and steps have been taken to add dignified commercial announcements to our advertising section.

A complete record of all advertising items is kept; namely, the purpose, cost, and income of advertising, both direct mail and magazine.

Information Booklet. This useful twenty-page description of the purposes

and activities of the Association, revised annually, has served us well this year as a medium of information to prospective members. Some eight thousand copies were sent to nonmember economists, processed from lists described elsewhere in this report.

Committee Activities. The list of members of all standing and ad hoc committees will be found at the end of this report. Since the account of committee activities is reported more fully than usual in the minutes of the Executive Committee (for the information of its members before publication), the reader is referred to these minutes and to the reports of the committee for a more complete record.

Committee on Research and Publications (J. P. Miller, Chairman). New developments in this Committee's activities are the announced publication of the first volume of the five-volume cumulative index project, prepared under the direction of J. P. Miller; the establishment of a subcommittee on surveys of foreign economic research, G. H. Hildebrand, Chairman; and the formulation of the translation of foreign classics project—not yet implemented.

Committee on Economic Education (C. C. Bloom, Acting Chairman). Funds have been received and committees have been organized for the two projects approved last spring: (1) a study of textbooks in American history, social problems, and economics; (2) a co-operative study of the social sciences in the secondary schools. The register of economists in economic education, compiled from the 1956 Handbook questionnaire, has been brought up to date.

Committee on Honors and Awards (Clair Wilcox, Chairman). A report to the Executive Committee will be submitted at the spring meeting.

Committee on Additional Awards to Younger Economists (M. A. Copeland, Chairman). Report laid on the table for consideration at the spring meeting of the Executive Committee.

Committee on Academic Freedom and Civil Liberties (Fritz Machlup, Chairman). See report below.

Committee on Association Deficit (S. E. Leland, Chairman). No report. In the light of financial results of 1958 and 1959, the Committee asks if it should prepare a sequel to last year's report or if it should be discharged.

Committee on the Papers and Proceedings (Roy Blough, Chairman). The Committee has concluded from preliminary investigation that the Papers and Proceedings is a useful volume, well prepared. It submitted no formal report, but if continued as an active committee, it may send questionnaires to a larger sample of members, examine criticisms made, and submit suggestions as to how the Papers and Proceedings could be made a more useful volume.

Committee on the Secretary-Treasurer Successorship (A. F. Burns, Chairman). This Committee has been enlarged to include the President and the First Vice-President. No report has been submitted for the record.

Committee on Travel Grants (L. G. Reynolds, Chairman). Two grants were awarded in 1959 and two have been approved for 1960. The fund has not yet been exhausted.

Committee of Judges for the Open Competition (W. J. Fellner, Chairman). The results of this year's open competition prompted the Committee to recommend discontinuing this experiment. However, suggestions were made

for modifying procedures and these were referred to the incoming president. *Nominating Committee* (G. W. Stocking, Chairman). The Committee has been constituted and solicits suggestions of names for candidates to office and also names of foreign economists who might appropriately fill vacancies on our present list of foreign honorary members.

Miscellaneous Reports. Reports on the IEA, the Institute of International Education Advisory and Policy Board representatives, the Asia Foundation grant, UNESCO, and the conference on the recognition of the social sciences are reported in the Executive Committee minutes.

Reports of our representatives to the SSRC, ACLS, NBER, and AAAS are published below.

Standing Committees

COMMITTEE ON RESEARCH AND PUBLICATIONS

John Perry Miller, Chairman (1959)

Max F. Millikan (1959)

William H. Nicholls (1959)

Alexander Gerschenkron (1960)

Robert A. Gordon (1960)

Willard L. Thorp (1960)

Gardner Ackley (1961)

James Washington Bell, Ex Officio

CUMULATIVE INDEX ADVISORY COM-

John Perry Miller, Chairman Robert Bishop Earl J. Hamilton Fritz Machlup

Joseph J. Spengler

COMMITTEE TO EXPLORE WAYS OF MAKING WORK OF FOREIGN ECONOMISTS AVAILABLE TO AMERICAN ECONOMISTS

John Perry Miller, Chairman Albert O. Hirschman Hans J. Brems Kermit Gordon Abram Bergson

COMMITTEE ON ACADEMIC FREEDOM AND CIVIL LIBERTIES

Fritz Machlup, *Chairman* (1959) Francis M. Boddy (1960) Howard R. Bowen (1961) COMMITTEE ON ECONOMIC EDUCA-

Ben W. Lewis, Chairman (1959)

Clark L. Allen (1959)

Kenyon Knopf (1959)

Archibald McIsaac (1960) (d. 1/

12/60)

Paul J. Strayer (1960)

Emanuel T. Weiler (1960)

Clark C. Bloom (1961)

Floyd A. Bond (1961)

Laurence Leamer (1961)

COMMITTEE ON HONORS AND AWARDS

Clair Wilcox, Chairman (1962)

Paul A. Samuelson (1962)

Gardner Ackley (1964)

Fritz Machlup (1964)

J. Douglas Brown (1960)

Jacob Marschak (1960)

Ad Hoc Committee on Additional Awards to Younger Economists

Morris A. Copeland, Chairman

Harold M. Somers
Joseph J. Spengler

James Washington Bell

COMMITTEE ON ASSOCIATION DEFICIT

• Simeon E. Leland, Chairman Howard R. Bowen Milton Friedman James Washington Bell Bernard F. Haley COMMITTEE ON PROCEDURE FOR AWARDING CARNEGIE CORPORATION TRAVEL GRANTS

George W. Stocking, *Chairman* Edward S. Shaw James Washington Bell

COMMITTEE ON TRAVEL GRANTS
Lloyd G. Reynolds, Chairman
(1960)
Solomon Fabricant (1959)
Arthur F. Burns
James Washington Bell
Ex Officio

Institute of International Education, Advisory and Policy Board

Theodore Morgan, Chairman
Rendigs T. Fels
Carter Goodrich
Michael Hoffman
D. Gale Johnson
Irving B. Kravis
Lorie Tarshis

Council and Other Representatives

ACLS

Frank H. Knight (1962)

SSRC

William H. Nicholls (1959) Robert A. Gordon (1960) Gardner Ackley (1961)

AAAS

William S. Vickrey

NBER

Willard L. Thorp (1960)

IEA REPRESENTATIVES

Howard S. Ellis (1961) Gottfried Haberler (1961)

UNESCO REPRESENTATIVE Calvin B. Hoover

GENERAL ELECTRIC FOUNDATION, FELLOWSHIP SELECTION COMMITTEE James Washington Bell

Committees Appointed During the Year

FINANCE COMMITTEE

C. Wells Farnham, *Chairman*Corliss D. Anderson
James Washington Bell

Nominating Committee

John D. Black, Chairman Alice E. Bourneuf Raymond T. Bowman James M. Buchanan George Garvy Kenneth Roose

COMMITTEE ON ELECTIONS

Harold F. Williamson, *Chairman*Arnold C. Schumacher
James Washington Bell, Ex Officio

COMMITTEE ON LOCAL ARRANGE-

Raymond T. Bowman Cochairmen

COMMITTEE OF JUDGES FOR THE OPEN COMPETITION

William J. Fellner, Chairman
James W. McKie, Secretary
Charles E. Bishop
John H. Kareken
Samuel M. Loescher
G. Warren Nutter
Oscar Ornati
John H. Power
Lloyd G. Reynolds

Richard Ruggles

COMMITTEE ON FOREIGN SURVEYS OF COMMITTEE ON THE SECRETARY-ECONOMIC RESEARCH

George H. Hildebrand, Chairman

COMMITTEE ON THE Papers and Proceedings

Roy Blough, Chairman

J. Douglas Brown Joseph W. Conard William J. Fellner Milton Friedman

COMMITTEE ON PROFESSIONAL ETHICS

Robert D. Calkins, Chairman

Richard Ruggles Joseph Dorfman

TREASURER SUCCESSORSHIP

Morris A. Copeland

George W. Stocking

Arthur F. Burns, Chairman

Representatives of the Association on Various Occasions

American Association for the Advancement of Science

December, 1959, Meeting

William S. Vickrey

DEDICATION CEREMONIES FOR PIUS XII MEMORIAL LIBRARY, St. LOUIS UNI-VERSITY

George W. Coleman

COMMISSION ON TEACHER EDUCATION AND PROFESSIONAL STANDARDS OF THE NATIONAL EDUCATION ASSOCIATION

Kansas Conference

Clark C. Bloom

Paul R. Olson

UNESCO, SEVENTH NATIONAL CONFERENCE

Alonzo B. May

James R. Maddox

COOPER UNION, ONE HUNDREDTH ANNIVERSARY ACADEMIC CONVOCATION FOR THE ADVANCEMENT OF SCIENCE AND ART

Joseph Dorfman

American Academy of Political and Social Science

April Meeting

Joseph H. Willits

Clair Wilcox

Irving B. Kravis

American Political Science Association

April Meeting

Fritz Machlup

INAUGURATION OF UNIVERSITY AND COLLEGE PRESIDENTS

Ralph Alexander Morgen, Rose Polytechnic Institute

Waldo F. Mitchell

Mason Welch Gross, Rutgers University

Eugene E. Agger

Ralph Wilson Mohney, Tennessee Wesleyan College Robert L. Martin

Branford Price Miller, Portland State College

Richard B. Halley

Leslie Stephen Wright, Howard College

Richard T. Eastwood

George Thomas Walker, Northeast Louisiana State College

Thomas R. McCann

David Grier Martin, Davidson College

A. G. Griffin

Vincent Brown Coffin, University of Hartford

Charles Gilbert

Morris Meister, Bronx Community College

Henry H. Villard

Thomas Corwin Mendenhall, Smith College

Willard L. Thorp

Charles Easton Rothwell, Mills College

Richard E. Jay

Laurence Hasbrouck Snyder, University of Hawaii

Shelley M. Mark

Asa Smallidge Knowles, Northeastern University

William H. Miernyk

Harvey Mitchell Rice, Macalester College

Arthur R. Upgren

Use of the Mailing List

Permission was granted to the following to use our mailing list to send the material indicated:

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE: To announce May Annals, "Administration of Technical Cooperation Programs"

AMERICAN ASSEMBLY: United States Monetary Policy

AMERICAN COUNCIL OF LEARNED SOCIETIES: Names of Central and Latin-American members for use of Council on Higher Education in the American Republics

American Enterprise Association: Catalogue of publications

AFL-CIO: To announce establishment of a speakers bureau; The Relationship of Price to Economic Stability and Growth; to announce current publications

AMERICAN INSTITUTE FOR ECONOMIC RESEARCH: Bulletin reviewing fourth edition of *Economics*, An Introductory Analysis, by Paul A, Samuelson

AMERICAN STATISTICAL ASSOCIATION: To announce Proceedings of the Business and Economic Statistics Section, and to offer membership in ASA; to announce meeting of Chicago Chapter

Brookings Institution: To announce publications

UNIVERSITY OF CALIFORNIA PRESS: To announce Economic Development of Communist China

CAMBRIDGE UNIVERSITY PRESS: To announce clearance sale of books in economics and economic history

Case Institute of Technology: To announce conference on operations research

CHESAPEAKE & OHIO RAILWAY: Annual Report

University of Chicago Press: Promotion of Journal of Political Economy and Journal of Business

COMMITTEE FOR ECONOMIC DEVELOPMENT: The Budget and Economic Growth, The European Common Market, and Improving Public Financed Education

COOLIDGE COMPANY: To promote The Reporter

Ford Foundation: Fellowship announcements; booklet on program activities Fordham University: To announce The Role of Government in Economic Development, by Edward S. Mason

GENERAL ELECTRIC COMPANY: Annual Report

HILL AND KNOWLTON: Economic Trends in the Iron and Steel Industry; address by Clarence B. Randall; Congressional Record item; Atlantic Monthly reprint, "Can Union Power Be Curbed?"

University of Illinois Press: To announce Sales Taxation, by John F. Due; to announce publications

Indiana University: To promote Business Horizons

Institute of Life Insurance: 1959 Life Insurance Fact Book

Augustus M. Kelley: To announce publications

LIBERTARIAN PRESS: To announce translation of Capital and Interest, by Eugene Böhm-Bawerk

S. Morris Livingston: Reprint, "Competition and Retail Gasoline Prices" University of Michigan, Mental Health Research Institute: To promote Behavioral Science

HUGH MOORE FUND: The Population Bomb

NATIONAL PLANNING Association: To announce staff study on long-range projections, by Gerhard Colm; to announce several publications in series on competitive coexistence

OKLAHOMA STATE UNIVERSITY, DEAN EUGENE L. SWEARINGEN: To bring up to date addresses of economists interested in adult education

PRINCETON UNIVERSITY PRESS: Catalogue on sale of National Bureau of Economic Research books

PRUDENTIAL INSURANCE COMPANY OF AMERICA: Reprints, "Inflation and the Struggle for Economic Power," "How Can We Achieve More Rapid Economic Growth?" "The Basic Goals of the American Economy," "Should We Accept Inflation?" by Carrol M. Shanks

ROOSEVELT UNIVERSITY: Announcement of John Kenneth Galbraith lecture Howard M. Teaf, Jr.: Announcement to Pennsylvania members

UNESCO: Promotional mailing on social science publications, especially new name and format of *International Social Science Journal*

WILLIAMS COLLEGE: Announcement to members in selected countries

YALE UNIVERSITY PRESS: To announce Planning for Freedom, by Eugene V. Rostow, The Hungarian Experience in Economic Planning, by Bela Balassa, and Integration and Competition in the Petroleum Industry, by de Chazeau and Kahn

Respectfully submitted,

JAMES WASHINGTON BELL, Secretary

EXHIBIT I PUBLICATION COSTS

Year* Number of Pages Number of Copies Cost Number of Pages Number of Copies Cost 1930 222 4,300 \$ 1,353.91 \$ 1931.308 4,300 1,919.18 88 4,200 \$ 589.54 1932 316 4,200 1,819.75 88 3,900 522.71 1934 232 3,700 1,192.91 1935 248 4,000 1,347.88 1936 360 4,200 2,037.90 58 4,100 454.36 1937 344 4,300 1,922.03 1938 200 4,500 1,234.10 112 4,500 1,118.84† 1939 288 4,600 1,785.91 108 5,000 822.58 1941 479 5,200 3,294.45 108 5,000 822.58 1941 479 5,800 3,350.40 1 144 5,900 1,215.22† 1943 535 5,500 3,350.40 1 144 5,900 1,215.22†		Papers at	APERS AND PROCEEDINGS		S HANDBOOKS		
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1937 344 4,300 1,922.03 1938 200 4,500 1,234.10 112 4,500 1,118.84† 1939 288 4,600 1,785.91 108 5,000 822.58 1940 444 4,900 2,657.12 108 5,000 822.58 1941 479 5,200 3,294.45 3,909.79 208 5,500 1,775.72† 1943 535 5,500 3,652.56 5,500 1,775.72† 1943 535 5,500 3,652.56 5,500 1,775.72† 1944 470 5,800 3,350.40 1 144 5,900 1,215.22† 144 144 5,900 1,215.22† 144 144 5,900 1,215.22† 144 149.00 14,30.79 143 6,900 2,035.71 1947 781 7,700 8,140.79 143 6,900 2,035.71 1947 781 7,700 8,140.79 143 5,700 6,948.06† 1949 537 9,500							
1938 200 4,500 1,234.10 112 4,500 1,118.84† 1939 288 4,600 1,785.91 108 5,000 822.58 1940 444 4,900 2,657.12 108 5,000 822.58 1941 479 5,200 3,294.45 108 5,000 822.58 1942 548 5,400 3,909.79 208 5,500 1,775.72† 1943 535 5,500 3,652.56 5,500 1,775.72† 1944 470 5,800 3,350.40 144 5,900 1,215.22† 1945 536 6,400 4,502.84 1946 960 6,700 8,149.90 143 6,900 2,035.71 1947 781 7,700 8,140.79 143 6,900 2,035.71 1948 591 8,500 8,701.41 345 7,700 6,948.06† 1951 816 10,400 11,965.40 18 8,300 692.63					58	4,100	454.36
1939							
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			4,500		112	4,500	1,118.84†
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			4,600		400	= 000	000 50
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			4,900		108	5,000	822.58
1943 535 5,500 3,652.56 1944 470 5,800 3,350.40 1945 536 6,400 4,502.84 1946 960 6,700 8,149.90 143 6,900 2,035.71 1947 781 7,700 8,140.79 1948 591 8,500 8,701.41 345 7,700 6,948.06† 1949 537 9,500 7,844.50 1950 650 10,100 9,864.76 41 9,200 1,163.84† 1951 816 10,400 11,965.40 18 8,300 692.63† 1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200			5,200		000	E 500	4 777 704
1944 470 5,800 3,350.40 1945 536 6,400 4,502.84 1946 960 6,700 8,149.90 1947 781 7,700 8,140.79 1948 591 8,500 8,701.41 345 7,700 6,948.06† 1949 537 9,500 7,844.50 41 9,200 1,163.84† 1951 816 10,400 11,965.40 18 8,300 692.63† 1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677					208	3,300	1,773.727
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			5,300				
1945 536 6,400 4,502.84 1946 960 6,700 8,149.90 143 6,900 2,035.71 1947 781 7,700 8,140.79 345 7,700 6,948.06† 1948 591 8,500 8,701.41 345 7,700 6,948.06† 1949 537 9,500 7,844.50 41 9,200 1,163.84† 1950 650 10,100 9,864.76 41 9,200 1,163.84† 1951 816 10,400 11,965.40 18 8,300 692.63† 1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 1957	1944		5,800				
1946 960 6,700 8,149.90 143 6,900 2,035.71 1947 781 7,700 8,140.79 345 7,700 6,948.06† 1948 591 8,500 8,701.41 345 7,700 6,948.06† 1949 537 9,500 7,844.50 41 9,200 1,163.84† 1950 650 10,100 9,864.76 41 9,200 1,163.84† 1951 816 10,400 11,965.40 18 8,300 692.63† 1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 1957 754 12,400 16,253.84 548	10/15		5,900			;	
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$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			7 700		143	0,900	2,055.71
1949 537 9,500 7,844.50 41 9,200 1,163.84† 1950 650 10,100 9,864.76 41 9,200 1,163.84† 1951 816 10,400 11,965.40 18 8,300 692.63† 1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†			8 500		3/15	7 700	6 048 06+
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			9,500	7 844 50	343	7,700	0,940.00
1951 816 10,400 11,965.40 18 8,300 692.63† 1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 7 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†			10,100	9.864.76	41	9 200	1.163.84†
1952 768 10,700 13,190.83 11 8,188 620.09† 1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 8 10,100 15,815.33† 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†						8,300	
1953 612 10,900 10,935.98 187 8,400 4,416.69 1954 765 11,000 13,932.96 11 7,900 660.06† 1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 8 10,100 15,815.33† 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†			10,700			8,188	
1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 8 10,100 15,815.33† 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†			10,900			8,400	
1955 711 11,000 12,900.41 8 8,000 540.21† 1956 651 11,200 12,115.97 8 10,100 15,815.33† 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†						7,900	
1956 651 11,200 12,115.97 1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†	1955		11,000			8,000	
1957 754 12,400 16,253.84 548 10,100 15,815.33† 1958 677 12,700 15,471.98 32 9,300 1,434.01†	1956		11,200			, , ,	
1958 677 12,700 15,471.98 32 9,300 1,434.01†	1957	754		16,253.84	548	10,100	15,815.33†
1959 689 14,000 16,780.44	1958	677		15,471.98	32	9,300	1,434.01†
	1959	689	14,000	16,780.44		-	

^{*} This is the year of publication and pertains to the meeting of the preceding year. The figures are published in the subsequent year.

† "Who's who" volumes; 1950 and 1958—"Who's who" supplements; others—names and address supplement.

‡ Part of papers presented at annual meeting published as supplement to June number.

EXHIBIT II MEMBERS AND SUBSCRIBERS

	Totals 11/30/58	Added	Removed	Gain or Loss	Totals 11/30/59
Class of membership: Annual. Junior. Family. Complimentary. Life. Honorary.	8,248 612 131 82 101 15	1,108* 712† 17 5 17	446 443* 1 6 1	662 278 16 1 16	8,910 890 147 81‡ 117 14
Total members Subscribers	9,189 3,659	1,868 895	898 695	970 200	10,159 3,859
Totals	12,848	2,763	1,593	1,170	14,018

^{*} Includes 189 junior members changed to annual.
† Includes 11 annual members changed to junior.
‡ Includes 20 who do not receive publications.
§ Resigned, 100; nonpayment, 210; died, 44; lack of address, 81; changed to junior members, 11.

REPORT OF THE TREASURER FOR THE YEAR ENDING NOVEMBER 30, 1959

The financial results of the past fiscal year are shown in the accompanying tables, with comparable figures for 1958 and 1950. The first table shows comparative financial condition and the second comparative income and expenses, with budget estimates for both 1959 and 1960.

Financial Operations. Income from all sources for 1959 amounted to \$118,980, an increase of \$12,700 over that of 1958, and net expenses of

COMPARATIVE FINANCIAL CONDITION, 1950, 1958, AND 1959

Assets		11/30/50	11/30/58	11/30/59
Bonds	Cash on deposit and on hand. Receivables (net)	3,144 452	6,459 1,430	8,552 623
Liabilities and Funds	Bonds			
Accounts payable. \$ 9,100 \$ 10,673' \$ 11,893 Deferred income. 18,540 10,809 14,430 Membership extension fund. 966 — — Fund for proposed secretariat. 35 — — Carnegie Fund for International Travel. — 7,750 6,662 Ford Fund for index of economic journals. — 5,089 551* Ford Fund for register of economists. — 2,628 1,841 Fund for Committee on Research and Publications. — 2,500 1,855 Asia Foundation Fund. — 2,500 1,855 American Economic Review survey articles. — — 24,631 Foreign Economic Research Translations. — — 24,631 Foreign Economic Research Translations. — — 225,000 Foreign Economic Education. — — 40,000 Committee on Papers and Proceedings. — — — Committee appropriations (not expended) 3,208 — — Life memberships. 5,200 10,900 12,300 Total lia	Total assets	\$105,655	\$169,898	\$270,026
Surplus Balance at beginning of period. \$ 63,269 \$113,168 \$118,987 Transfers from life memberships. 225 200 300 Net income or loss for period. 5,112 5,619 9,785	Accounts payable. Deferred income. Membership extension fund. Fund for proposed secretariat. Carnegie Fund for International Travel. Ford Fund for index of economic journals. Ford Fund for register of economists. Fund for Committee on Research and Publications. Asia Foundation Fund. American Economic Review survey articles. Secondary School Social Studies Survey. Foreign Economic Research Translations. Foreign Economic Research Translations. Foreign Economic Surveys. Committee on Economic Education. Sundry. Committee on Papers and Proceedings. Committee appropriations (not expended).	18,540 966 35 	10,809	14,430 — 6,662 551* 1,841 382 1,855 1,775 24,631 25,000 40,000 432 54 250
Balance at beginning of period. \$ 63,269 \$113,168 \$118,987 Transfers from life memberships. 225 200 300 Net income or loss for period. 5,112 5,619 9,785	Total liabilities and funds	\$ 37,049	\$ 50,911	\$140,954
Unappropriated Surplus \$\phi 00,000 \$\phi 10,901 \$\phi 129,012	Balance at beginning of period	5,112	200 5,619	300 9,785
Total footings	·			

^{*} Denotes red.

\$108,345, an increase of \$7,700. Net operating income of \$10,635 showed an increase of \$5,200 over 1958. After appropriation adjustments and allowing for accrued liability for the directory or handbook, the net for 1959 shows \$5,785, or about \$4,000 more than 1958. Increased income from dues and subscriptions of \$4,516 reflect a gain of 1,170 memberships and subscrip-

COMPARATIVE RESULTS OF OPERATIONS FOR 1950, 1958, AND 1959

- 1				
1/30/50	11/30/58	1959 Budget	11/30/59	1960 Budget
\$38,462 14,273 2,863 8,048	\$ 52,242 20,728 4,682 13,724 4,673 294	\$ 54,000 21,000 4,500 14,500 5,000 300	\$ 55,214 22,272 3,305 14,948 8,524 357	\$ 58,000 23,000 3,500 18,000 10,000 300
63,646	\$ 96,343	\$ 99,300	\$104,620	\$112,800
3,860 131*	\$ 1,770 3,183 217* 9,853	\$ 1,770 3,300 250*	\$ 3,895 3,231 235* 7,469	\$ 3,000 3,300 250*
4,847	\$ 14,589	\$ 4,820	\$ 14,360	\$ 6,050
68,493	\$110,932	\$104,120	\$118,980	\$118,850
\$11,837 2,610 431* 1,146 523 716	\$ 28,805 8,456 1,088* 2,107 626	\$ 30,000 9,250 — 2,200 700	\$ 28,697 10,289 3,494* 1,687 881	\$ 30,000 10,500 2,000 900
\$16,402	\$ 38,906	\$ 42,150	\$ 38,060	\$ 43,400
\$24,519 9,685 1,164	\$ 33,795 15,472 1,434	\$ 35,750 15,500 650	\$ 37,521 16,780	\$ 42,000 16,000
1,573 7,475 563	2,448 12,358 1,084	2,600 12,750 900	1,788 12,787 1,409	2,600 13,100 800
44,979	\$ 66,591	\$ 68,150	\$ 70,285	\$ 74,500
61,381	\$105,497	\$110,300	\$108,345	\$117,900
7,112 2,000*	\$ 5,435 184	\$ 6,180* -	\$ 10,635 850*	\$ 950 - 4,000
5,112	\$ 5,619	\$ 10,180*	\$ 5,785	\$ 3,050*†
	38,462 14,273 2,863 8,048 	\$38,462 \$52,242 20,728 4,682 13,724 4,673 294	\$38,462	338,462 14,273 20,728 21,000 22,272 2,863 4,682 4,500 14,948 300 357 4,682 4,500 14,948 5,000 8,524 300 357 8,048 4,673 294 300 357 14,948 5,000 8,524 300 357 363,646 \$ 96,343 \$ 99,300 \$ 104,620 313 217 275 9,853 - 9,853 - 9,853 - 7,469 3,183 3,300 3,231 217 250* 235* 7,469 3,4,847 \$ 14,589 \$ 4,820 \$ 14,360 368,493 \$ 110,932 \$ 104,120 \$ 118,980 311,837 2,610 431* 1,146 2,107 523 626 716 8,456 1,088* - 2,200 3,494* 1,687 700 716 - 2,200 1,687 700 716 366,402 \$ 38,906 \$ 42,150 \$ 38,060 \$ 33,795 15,472 15,500 16,780 - 15,472 1,144 1,434 1,434 1,434 12,358 12,750 15,500 11,788 7,475 563 1,084 12,358 12,750 12,787 563 1,084 900 1,409 1,788 12,358 12,750 12,787 1,409 900 1,409 364,979 \$ 66,591 \$ 68,150 \$ 70,285 661,381 \$ 105,497 \$ 110,300 \$ 108,345 67,112 \$ 5,435 184 - 4,000 4,000 \$ 10,635 850* 10,635 850* 10,635 850* 10,600

^{*} Denotes red.

[†] Allowance for appropriations (committee expenses and salary increases) made at the December meetings would increase net deficit by \$4,100.

tions. Sales of our publications declined from the previous *Handbook* year but revenue from advertising increased, and there was a marked increase in income from sale of our mailing list.

Income from investments remained about the same as last year, with larger returns from interest and smaller profits on sales of securities. The increased interest return resulted from the investment of foundation funds pending their use and from higher market rates.

Total expenses increased slightly (from \$105,000 to \$108,000); the significant items being administrative and operating expenses, *Review* printing and cost of the *Papers and Proceedings*. The annual meeting instead of being an expense yielded an especially large net surplus.

	At Par		Cost		Market
Year	Bonds	Bonds	Stocks	Total	Stocks and Bonds
1925 1930 1933 1935 1940 1942 1945 1948 1950 1951 1952 1953 1954	\$25,000 31,000 33,500 16,000 25,000 27,000 40,000 35,000 43,000 43,000 42,000 68,000 61,000	\$24,661 32,439 32,962 15,280 22,519 24,651 36,705 33,108 43,340 42,312 68,308 61,518	\$ 3,954 28,114 41,155 41,556 44,955 48,624 51,978 49,764 58,934 46,458 38,082	\$ 24,661 32,439 36,916 43,394 63,675 66,207 81,661 81,732 85,087 93,104 101,246 114,766 99,600	\$ 31,522 50,338 60,553 58,211 103,574 84,841 104,177 117,316 130,836 134,562 132,280
1955 1956 1957 1958 1959*	75,000 75,000 75,000 75,000 75,000	75,370 75,370 75,370 75,370 75,386	59,394 60,237 55,084 67,741 67,652	134,764 135,607 130,454 143,111 143,038	166,772 168,337 151,638 175,609 191,506

INVESTMENT PORTFOLIO

Every effort has been made during the past year to hold down expenses and to increase income. These were directed along the lines recommended by the Committee on Association Deficit (see report, 1959, *Papers and Proceedings*, pages 651-57) and are treated seriatim below.

- 1. Accrual of Handbook Costs. The policy of the Association in issuing the directory or handbook at irregular intervals (i.e., 1957, 1953, and 1948) will probably result in the publication of the next issue in 1961 or later (1960 would mark the seventy-fifth anniversary of the founding of the Association). Estimating the printing costs of the directory to be about \$20,000, we are allocating \$4,000 per annum during the intervening five-year period.
- 2. Increased Economies. Every effort has been made to increase the productive efficiency of the staff and to conduct the operations of the Secretary's Office at the lowest cost possible. The handicaps of working with limited staff, with part-time personnel, and with high labor turnover has made economizing difficult; but costs have been held down and office salaries have not been increased substantially above last year.

^{*} Does not include bonds held in temporary operating fund.

- 3. The Papers and Proceedings. This volume continues to be large and costly, despite the special efforts made by the President and Secretary to keep size wieldy and costs reasonable. The Committee on Association Deficit recommended that a committee be appointed to review the desirability of modifying the Papers and Proceedings or omitting its publication. Such a committee has been constituted and a report was presented at the December Executive Committee meetings.
- 4. Expansion of Miscellaneous Income. In keeping with the suggestion of the Committee on Association Deficit, advertising rates were reviewed and a new rate card has been prepared, to go into effect January 1, 1960. Additional advertising has been solicited, both for the *Review* and for the *Papers*

Year	Bonds	Stocks	Total	Rate of Return on Cost
1925 1930 1933 1935 1940 1942 1945 1948 1950 1951 1952 1953 1954 1955 1956 1957	\$1,350 1,695 1,679 1,022 1,037 1,306 1,479 1,194 1,117 1,026 1,117 1,435 1,621 1,750 1,770 1,770 1,770 2,518	\$ 108 680 2,182 2,186 2,488 2,944 3,860 4,607 3,681 3,587 2,961 3,002 3,336 3,397 3,182 3,231	\$1,350* 1,695 1,788 1,703 3,220 3,492 3,968 4,139 4,977 5,633 4,799 5,022 4,582 4,752 5,106 5,167 4,952 5,749	5.22% 4.84 3.92 5.06 5.28 4.71 5.06 5.85 6.05 4.75 4.36 4.36 4.58 3.53 3.76 3.90

RETURN ON INVESTMENTS

and Proceedings. The market for this advertising has been tested and we believe that the new advertising rate structure, based on increased paid circulation, is reasonable and fair.

The use of our mailing list has proved to be a profitable undertaking, but the income from this source has involved some difficult adjustments. When our addressing was done by our publishers, the costs were included in the basic price (these have increased nontheless but maybe not as much as would have been the case if the addressing service were still being done by them). We absorb the costs of our own mailing (four issues of the *Review*, one *Papers and Proceedings*, one preliminary announcement and ballot, and one mailing of dues bills, which would amount to \$800 or \$900 if we had to pay someone else for this service) and at the same time in 1959 we derived an income from the sale of this list of \$8,500—this with very slight increase in staff.

The use of our addressing machine has also facilitated membership promo-

^{*} Estimated income for year.

[†] Does not include income from bonds held in temporary operating fund.

tion. We have exchanged our list for lists of other organizations. We have also had to purchase some lists but at a preferred rate. These lists, containing names of economists in the academic field, in business, and in governmental service, totaling some 15,000 names in all, were checked against our own membership list, and publicity material such as the information booklet, with an application blank included, was sent to all economists not members. One special list of Asiatic economists in the United States was obtained from the Institute of International Education. With the consent of the Asia Foundation, those attending graduate schools were invited to become members without cost and others at half rate.

A special record was kept of the costs of this promotion (N.B. \$2,044), which largely accounts for the increased administrative expenses shown in the operating account, but it contributed substantially to the increased membership (9,189 to 10,159). Even if all members dropped in August were reinstated, this would mean that about 400 new members were added as a result of this drive.

Contract arrangements with the publishers of our "Readings Series" have been reviewed and numerous inquiries have been made concerning publication costs with other companies than Banta and Irwin. We are not at this time prepared to make recommendations for a change. Incidentally, the five-volume cumulative index project will probably be done by Richard D. Irwin, Inc.

The net profit from the 1958 annual meetings was about \$3,500, an amount substantially larger than any yet derived from annual meetings. This unexpected net profit does not represent any change in policy but resulted from a registration fee which proved to be unnecessarily large and from other revenues which were unforeseen.

Budget Analysis. We would have experienced a deficit this year without profit from the sale of securities and interest received on the investment of foundation funds and net income received from the annual meetings. Barring such incalculable sources of income next year, we have no reason to expect much better than a balanced budget. This assumption also omits from consideration any new appropriations and the \$4,000 accrued liability figure for the directory. In other words, the operations of the Association cannot normally be expected to pay for themselves. We depend upon nonoperating sources of income and ultimately upon the attrition of our accumulated surplus. This year investment income provided about $12\frac{1}{2}$ per cent of total income. Inspection of Exhibit II of the Report of the Committee on Association Deficit (May, 1959, Papers and Proceedings, page 657) indicates that investment income has enabled us to avoid a deficit in nine out of the past twelve years.

A preliminary budget for 1960 was set up before the December meetings of the Executive Committee. Income and expense items were shown for 1958, 1959, actual and budget figures (this to show how far off were the estimates made and how subsequent events invalidated them). The premilinary estimate for 1960 needed revision as the result of the following developments since the December meetings: (1) favorable returns (collections) of dues

bills sent out; (2) renewals of advertising contracts at higher new rates; (3) steady inquiries for use of our mailing list; (4) higher money rates and favorable business outlook which should maintain investment income; (5) net income from the annual meeting.

Expenses are also larger than anticipated, especially the budget submitted by the Managing Editor, the size and cost of the *Papers and Proceedings* will again be large, and other committee expenses will increase. New committees are being constituted and appropriations made to implement their activities. Unless provision is made to pay for the work of some of the committees operating with foundation funds, these costs come out of the Association budget.

An appropriation of \$500 was made for the Committee on Professional Ethics. Salary increases were also authorized at the December meetings—increases totaling \$3,600.

The net results of the above considerations are shown in the revised budget which, though the estimate of income is shown to be larger, produces a bigger prospective deficit than the preliminary budget. This deficit will in all likelihood have to be met out of accumulated surplus unless a favorable market again enables us to take profit on investment holdings.

Although there is every reason to believe that we could go on for several years more with the present dues and subscriptions, the Treasurer feels constrained to repeat the recommendations made in last year's report (see pages 620-26, Papers and Proceedings, May, 1959) with respect to increased dues and subscription rates. The specific proposal was that we give regular members a choice of continuing to pay \$6.00 dues to receive either the American Economic Review or the Papers and Proceedings or \$8.00 dues for both (with no change in junior membership dues or subscription rates). Nothing was done about this proposal except to suggest that the newly constituted Committee on the Papers and Proceedings give it their consideration. However, such changes should not be made on short notice and if they were to become effective in 1961, we should take action soon.

Financial Condition. The Auditor's Report contains particulars of the changes which have occurred in assets and liabilities, 1958 and 1959. These changes call for no special comment except in the case of bond investments and funds. The presence of foundation funds somewhat distorts the picture on both the assets and liabilities sides of the statement, since we are in a sense custodians administering outside money earmarked for special projects which cannot be used for normal activities of the Association. Foundation grants accepted during the past couple of years amount to about \$166,000. The amount aavilable for specific projects at hand was \$101,222 (excluding AEA appropriations), which compares with \$17,927 for November 30, 1958. For comparative purposes, the amount of outside funds should be deducted from both assets and liabilities. When this is done, the total footings for 1958 and 1959 are \$151,931 and \$168,804, respectively. A separate accounting of funds is shown in the Auditor's Report but it is not made clear how the funds are accounted for on the assets side of the statement. In the Finance Committee Report, a statement of our investment holdings shows \$100,000 in U.S. Treasury securities, identified as "temporary operating fund." This represents the

money from foundations. A similar adjustment should be made in 1958 figures, where the amount of foundation funds is, however, reflected largely in the cash position.

The unappropriated surplus of \$118,987, November 30, 1958, has been increased by the amount of this year's net income and life memberships transferred to surplus. The figure as of November 30, 1959, amounted to \$129,072—\$121,072 after making allowance for the directory or handbook accrued liability of \$4,000 per annum for 1958 and 1959.

The value of our investment holdings—stocks and bonds—is shown in the accompanying table for selected years from 1925 to date. The rate of return on cost is also shown. The list of our holdings, together with changes made during the year, is found in the report of the Finance Committee.

Respectfully submitted,

James Washington Bell, Treasurer

REPORT OF THE FINANCE COMMITTEE

December 21, 1959

Executive Committee American Economic Association Evanston, Illinois

GENTLEMEN:

The accompanying tables present the list of the Association's investment holdings at the end of the fiscal year, November 30, 1959, and the changes

List of Securities Held by the Association Stocks

Number of Shares of Stock	Issue	Cost	Approximate Market Value 11/30/59
100 100 200 150 103 103 62 131 100 206 110 200 150 100	Abbott Laboratories American Trust Co. (San Francisco) Central and South West Corp. Chain Belt Co. Columbia Broadcasting System Fansteel Metallurgical Corp. Gulf Oil Corp. Houston Lighting and Power Co. International Nickel Co. of Canada. Monsanto Chemical Co. Peoples Gas Light and Coke Co. Pepsi-Cola Co. Siemens & Halske Socony Mobil Oil Co. Zenith Radio Corp.	\$ 6,133 4,261 2,802 6,621 2,682 4,680 1,390 1,625 7,822 7,756 3,562 4,963 5,519 3,882 3,954	\$ 6,700 6,100 12,000 10,800 4,134 6,798 6,696 8,908 10,500 10,500 6,600 6,800 6,400 6,000 12,200
		\$ 67,652	\$121,136

Bonds

Par Amount	Issue	Cost	Approximate Market Value 11/30/59
\$20,000 5,000 8,000 7,000 20,000 50,000	U.S. Treasury Notes, 4%, Series "D-1962," due $2/15/62$	\$ 20,003 5,000 8,000 7,276 20,091 50,016*	\$ 19,600 4,750 6,880 5,740 18,400 50,000*
,	Less	\$110,386 35,000	\$105,370 35,000
	BondsStocks	\$ 75,386 67,652	\$ 70,370 121,136
	Total	\$143,038	\$191,506

^{*} Of the \$50,000, \$35,000 represents foundation funds temporarily invested pending use in projects under way.

made in these holdings since the last report. Cost prices and approximate market values are shown both in the alphabetical list and in the classified list, the latter being grouped into fixed-income securities and common stocks classified according to the industry. Some explanation is needed to reconcile these figures with those presented in the auditor's account, since the latter includes funds from foundations granted to the Association for financing specific projects. Some of these projects are just getting under way or have not yet been started; hence the proceeds of the grant were invested as a temporary operating fund and should be separated from the funds belonging to the Association's investment account.

SUMMARY OF SECURITIES PURCHASED AND SOLD YEAR ENDED NOVEMBER 30, 1959

Issue	Shares or Par Value	Cost	Proceeds	Gain or Loss*
Sales Stocks— Inland Steel Co Zenith Radio Corp Gulf Oil Co.	50 50 .40	\$ 3,633.62 1,976.81	\$ 6,703.43 6,341.42 49.78	\$3,069.81 4,364.61 49.78
Bonds— U.S. Treasury Notes, 3\frac{1}{2}, 11/15/59 U.S. Treasury Notes, 3\frac{2}{3}, 11/15/59		50,015.63 15,000.00	50,000.00 15,000.00	15.63*
Exchanged for Other Bonds U.S. Treasury Notes, 1½, 2/15/59 U.S. Treasury Bonds, 2½, 12/15/58 Purchases	20,000.00	\$ 70,626.06 \$ 20,003.00 15,000.00	\$78,094.63	\$7,468.57
Stocks— Siemens & Halske	100	\$ 5,519.48		
Bonds— U.S. Treasury Notes, $3\frac{1}{2}$, $11/15/59$ U.S. Treasury Notes, $4\frac{2}{4}$, $8/15/60$ U.S. Treasury Certif. of Ind., $4\frac{3}{4}$, $11/15/60$	\$50,000.00 65,000.00 50,000.00	\$ 50,015.63 65,247.05 50,000.00		
Received on Exchange of Other Bonds U.S. Treasury Notes, 4, 2/15/62 U.S. Treasury Notes, 3\frac{3}{6}, 11/15/59	\$20,000.00 15,000.00	\$170,782.16 \$ 20,003.00 15,000.00		

^{*} Denotes red.

The proportions as well as the total amounts of stock and bond holdings in the investment account on a cost basis remain practically the same this year as last (and the previous four years). On the basis of market value, however, the ratio of bonds to total investments dropped from about 53 per cent to 37 per cent, this as the result of lower bond prices and an almost twofold increase in the value of our stocks.

Although the members of this Committee are in constant touch with each

Inventory and Appraisal of Securities as of November 30, 1959

	Par or Shares	Market Price	Market Value	% of Value	Approxi- mate Income	Cost
CASH EQUIVALENT U.S. Treas. 4½ 11/15/60 U.S. Treas. 2½ 11/15/61 U.S. Treas. 4 2/15/62 U.S. Treas. 2½ 8/15/63	5,000	100 95 98 92	\$ 50,000* 4,750 19,600 18,400		\$2,375* 125 800 500	\$50,016* 5,000 20,003 20,091
* Of the \$50,000, \$35,000 represents foundation funds invested pending use in projects under way.	7	Less	\$ 92,750 35,000 \$ 57,750	40.9 Less	\$3,800 1,662 \$2,138	(allocated to funds) (net)
Bonds U.S. Treas. 2½ 12/15/72-67 U.S. Treas. 2¾ 4/1/80-75		82 86	\$ 5,740 6,880		\$ 175 220	\$ 7,275 8,000
			\$ 12,620	5.6	\$ 395	
Common Stocks			\$ 70,370	46.5	\$2,533	
UTILITIES Central and South West Houston Lighting and Power Peoples Gas Light and Coke	200 131 110	60 68 60	\$ 12,000 8,908 6,600		\$ 360 210 253	\$ 2,802 1,625 3,562
Emmarovat			\$ 27,508	22.7	\$ 823	
FINANCIAL American Trust	100	61	\$ 6,100	5.0	\$ 160	\$ 4,261
Foods and Containers Pepsi-Cola	200	34	\$ 6,800	5.6	\$ 280	\$ 4,963
Chain Belt	150	72	\$ 10,800	8.9	\$ 367	\$ 6,621
MINING AND METALS Fansteel International Nickel	103 100	66 105	\$ 6,798 10,500		\$ 103 300	\$ 4,680 7,822
OIL AND GAS Gulf Oil Socony Mobil	62 150	108 40	\$ 17,298 \$ 6,696 6,000	14.3	\$ 403 \$ 189 300	\$ 1,390 3,882
CHEMICALS AND DRUGS Abbott Laboratories Monsanto Chemical	100 210	67 50	\$ 12,696 \$ 6,700 10,500	10.6	\$ 489 \$ 190 210	\$ 6,133 7,756
			\$ 17,200	14.2	\$ 400	.,
ELECTRICAL PRODUCTS Siemens & Halske Zenith	100 100	64 122	\$ 6,400 12,200		\$ 125 260	\$ 5,519 3,954
Managary			\$ 18,600	15.3	\$ 385	
MISCELLANEOUS Columbia Broadcasting System	106	39	\$ 4,134	3.4	\$ 148	\$ 2,682
Total common stocks			\$121,136	53.5	\$3,455	
Total securities	•	.	\$191,506	100.0	\$5,988	
TEMPORARY OPERATING FUND U.S. Treas. 4\frac{3}{4} 8/15/60	\$65,000 35,000	•	\$ 65,000 35,000			\$65,247 35,140
. /			\$100,000		-	

other, periodic reviews are made of our portfolio, and on those occasions formal meetings are held at which time decisions are made to buy or sell. A summary of securities purchased, exchanged, or sold is shown in the accompanying table. The timing of these changes has in most instances been fortunate and we have been able to take advantage of profit situations which have not only resulted in the appreciation of the market value of stocks held but also have netted us an income from sale of securities. In December, after the end of the fiscal year, two further shifts were made in our stock holdings: the sale of 103 Fansteel at 66 and 50 Zenith at 118¾ and the purchase of 150 American Potash at 41 and 50 Continental Illinois National Bank at 123. These changes will again be recorded in our next report.

As a source of income, interest and dividends and profits from sale of securities amounted to 12½ per cent of the total income of the Association from all sources (\$14,360 to the total income of \$118,980). For past years, comparisons are shown in the Report of the Committee on Association Deficit (*Papers and Proceedings*, May, 1959, page 657).

Respectfully submitted

C. Wells Farnham, Chairman Corliss D. Anderson James Washington Bell

REPORT OF THE AUDITOR

December 14, 1959

Executive Committee American Economic Association Evanston, Illinois

DEAR SIRS:

In accordance with instructions, we have examined the accounts and related records of the American Economic Association for the year ended November 30, 1959, and now submit our report thereon together with the following exhibits:

Auditor's Opinion

Statements of Financial Position—November 30, 1959

Exhibit 1

Statement of Income and Expense for Year Ended November 30, 1959

Exhibit 2

Results from Operations

Net income for the year ended November 30, 1959, was \$9,785 compared with net income of \$5,619 for the year ended November 30, 1958, as shown in the following summary:

		Ended nber 30	Increase	
Particulars	1958	1959	Decrease*	
Income: Dues Interest and dividends (net) Profit on sale of securities (net) Miscellaneous income	\$ 52,242 4,736 9,852 294	\$ 55,214 6,891 7,469 357	\$ 2,972 2,155 2,383* 63	
Total income	\$ 67,124	\$ 69,931	\$ 2,807	
Expense: Publication expense Less—Publication income	\$ 66,590 39,134	\$ 70,285 40,525	\$ 3,695 1,391	
Net Publication expense	\$ 27,456 34,233 184*	\$ 29,760 29,536 850	\$ 2,304 4,697* 1,034	
Total expense	\$ 61,505	\$ 60,146	\$ 1,359*	
Net income	\$ 5,619	\$ 9,785	\$ 4,166	
* Denotes red				

The \$2,972 increase in dues reflects the increase in membership as reported by the Secretary:

	Number o	f Members
	at Nove	mber 30
Classification	1958	1959
Regular		8,910
Junior	612	890
Family	131	147
Life	101	117
Honorary	15	14
Complimentary	82	81
	-	
Total	9,189	10,159

Interest on bonds owned was accounted for in accordance with stated rates; dividends received on stocks were compared with amounts reported in published records of dividends paid.

Net publication expense, as shown in the following summary, amounted to \$29,760 for the current year compared with \$27,456 for the preceding year:

		Ended	Budgetary
	Novem	aber 30	Estimates for
Particulars	1958	1959	Year 1959
Expenses:			
Printing of—			
Review	\$ 33,795	\$ 37,521	\$ 35,750
Proceedings	15,472	16,780	15,500
Directory and Handbook	1,434		650
Editor's honorarium	4,500	4,500	4,500
Payments to contributors	2,447	1,788	2,600
Editorial clerical salaries	7,858	8,287	8,250
Editorial supplies and expense	1,084	1,409	9 0 0
Total expenses	\$ 66,590	\$ 70,285	
Less—Income:			
Subscriptions, other than members	\$ 20,728	\$ 22,272	
Sales of copies	4,682	3,305	
Advertising	13,724	14,948	
Total income	\$ 39,134	\$ 40,525	
Net publication expense	\$ 27,456	\$ 29,760	
		======	

Billings for the December, 1959, issue of the *Review* and reprints had not been made by the publishers at the time of our examination. The publishers estimate the cost of the *Review* printings and reprints at \$10,050; this amount is included in the year's expenses.

Financial Position

Financial position of the Association at November 30, 1958, and 1959 is set forth in the following summary:

	Nover	Increase	
	1958	1959	Decrease*
Assets			
Cash on deposit and on hand	\$ 15,151	\$ 14,552	\$ 599*
Receivables (net)	6,459	8,552	2,093
Prepaid expenses	1,430	623	807*
Equipment, furniture and fixtures (net)	3,746	3,031	715*
Investments at cost—	-	•	
Bonds	75,370	175,617	100,247 91*
Stocks	67,742	67,651	91*
	\$169,898	\$270,026	\$100,128

Liabilities, Funds and Surplus			
Accounts payable	\$ 10,673	\$ 11,893	\$ 1,220
Deferred income	10,809	14,430	3,621
Funds	18,529	102,331	83,802
Life memberships	10,900	12,300	1,400
Unappropriated surplus—	•	,	
Balance at beginning of year	113,168	118,987	5,819
Net income for year	5,619	9,785	4,166
Life memberships transferred to surplus	200	300	100
	\$169,898	\$270,026	\$100,128

^{*} Denotes red.

Cash on deposit was satisfactorily reconciled with balances confirmed directly to us by the depositories.

The receivables of the Association were not confirmed by correspondence with debtors. Based upon the Association's past experience the reserve for doubtful accounts appears to be adequate to cover normal losses.

Changes in the investment account were verified by the examination of broker's invoices and other supporting data. Securities held at November 30, 1959, were confirmed directly to us by the State Bank and Trust Company of Evanston, Illinois, custodian for the Association.

Insofar as we are able to ascertain, all liabilities of the Association at November 30, 1959, are reflected in the accompanying statement of financial position, and the Secretary has represented to us that to the best of his knowledge all liabilities are disclosed.

Funds

The summary of financial position shows a net increase of \$83,802 in funds available for specific projects to \$102,331 at November 30, 1959. The receipts and expenditures during the year for the various funds and grants are indicated in the following table:

Fund	Balance 11/30/58	Received	Expended	Balance 11/30/59
Travel expense of delegates to international meetings	\$ 7,750	\$	\$ 1,088	\$ 6,662
economics		3,250	1,475	1,775
nomic journals	5,089 2,628	14,000	19,640 787	551* 1,841
significance into English language Preparation and publication of articles surveying economic research in foreign coun-		25,000		25,000
tries		40,000		40,000
ondary schools	 491	25,000	369 109	24,631 382
Committee on economic education	******	600† 250†	168	432 250
Asia Foundation	• 2,500 71		645 17	1,855 54
	\$18,529	\$108,100	\$24,298	\$102,331

^{*} Denotes red.

[†] These amounts are appropriations from the current year's operations. (See Exhibit 2)

We express our appreciation for the courtesies and co-operation extended to our representatives during the course of the examination.

Very truly yours,

DAVID HIMMELBLAU & Co. Certified Public Accountants

Annual Control of the		00:				.42	76	99.	.65 .75 102,330.39	00		30 040 111	169
	∮	1,775.00				90,921.42	381.76	431.66	1,854.65	\$ 12,300.00		100 040 25	129,014.
endos en estados en entre en estados en estados en estados en estados en estados en entre en estados en estados en estados en estados en entre en estados en estados en entre en estados en estados en estados en entre en estados en entre en estados en entre en entre en entre en entre en entre entre en entre en entre en entre entre en entre e		;	550.60*	25,000.00	40,000.00	24,630.91					118,987.35	9,785.00	Q. (Q.
SIT 1	AMERICAN ECONOMIC ASSOCIATION STATEMENT OF FINANCIAL POSITION—NOVEMBER 30, 1959	Rockefeller Foundation grant for survey articles on recent developments in economics	journals	language. Preparation and publication of articles survey-	ing economic research in foreign countries Survey study of economic	textbooks in secondary schools	Committee on Publication and Research Committee on Economic	Education	Asia Foundation Sundry Life Memberhas ann Sure-	PLUS: Life memberships Unappropriated surplus—	Datance November 30, 1958\$118,987.35 Net income for year ended November 30, 1650 (Fe	hibit 2). Life memberships trans-	* Denotes red.
EXHIBIT	ferican Econol Financial Pos	\$ 14,551.64		8,552.31	381.20 241.86	\$ 23,727.01	243,267.91		\$270,026.17	¢ 11 803 10	4 11,099.19		
	An STATEMENT OF	6,938.33 7,553.31 60.00	4,113.80 1,591.76 2,623.54 535.50	\$ 8,864.60			\$175,617.15 67,650.76			urplus	\$ 10,250.94	2011	\$ 6,662.15
	अं ऑ	Assets Current Assets: Cash on deposit and on hand— State Bank and Trust Company, Evanston. ton	Receivables— Review advertising	Less—Reserve for doubtful accounts	Inventory of stamps and envelopes Unexpired insurance	Total current assets	INVESTMENTS (at cost): Bonds	E S	(less accumulated depreciation)	Liabilities, Funds and Surplus CURRENT LIABILITIES:	: : : : : : : : : : : : : : : : : : :	HTANG	gie Corporation of New k grant for travel ex- ses of delegates to in- ational meetings

EXHIBIT 2

American Economic Association Statement of Income and Expense for the Year Ended November 30, 1959

Particulars	Amount		
INCOME: Dues— Regular, junior and family members Subscribing and contributing members		\$52,327.79 2,886.00	\$55,213.79
Investments— Interest on bonds Dividends		\$ 3,894.52 3,231.05	
Less—Custodian fees		\$ 7,125.57 234.66	6,890.91
Gain on sale of securities			7,468.57 357.45
Total income	• • • • • • • • • • • • • • • • • • • •		\$69,930.72
EXPENSE: Administrative and other expense— Secretary's salary. Office salaries. Addressing service income less expense. Stationery and printing. Postage. Membership promotion. Executive Committee expense. Other committee expense. Annual meeting income less expense. Annuity payments. Social security taxes. Provision for depreciation. Telephone and telegraph. International Economic Association. American Council of Learned Societies. Insurance. Office supplies. Miscellaneous expense (net).	\$ 4,500.00 24,196.92 8,523.74* 2,171.70 1,274.35 2,044.03 1,687.32 881.12 3,493.80* 916.30 384.08 858.35 450.97 800.00 100.00 169.26 367.28 751.93	\$29,536.07	
Publication expense— Printing of— Review Proceedings. Editorial honorarium Payments to contributors. Editorial clerical salaries. Editorial supplies and expense.	\$37,520.95 16,780.44 4,500.00 1,787.50 8,286.88 1,409.23		
Less—Publication income: Subscriptions other than mem-	\$70,285.00		
bers \$22,272.10 Sales of copies 3,305.30 Advertising 14,947.95	40,525.35	29,759.65	59,295.72
Less Appropriations: Committee on Economic Education	•	\$ 600.00 250.00	\$10,635.00 850.00
Net income for year (Exhibit 1)			\$ 9,785.00
* Red.		\ .	

Auditors' Opinion

Executive Committee American Economic Association

In our opinion, the accompanying financial statements present fairly the financial position of the American Economic Association at November 30, 1959, and the results of its operations for the year ended that date, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Our examination was made in accordance with generally accepted auditing standards and included such tests of the accounting records and other auditing procedures as we considered necessary in the discurrences.

circumstances.

Chicago, Illinois December 14, 1959

DAVID HIMMELBLAU & Co. Certified Public Accountants

REPORT OF THE MANAGING EDITOR FOR THE YEAR ENDING DECEMBER 1959

The number of manuscripts received during 1959 was substantially higher than in any preceding year on record—279, as compared with 190 in the year 1952 when I assumed the office of Managing Editor. The percentage of articles accepted has correspondingly declined—14 per cent in 1959 as compared with 21 per cent in 1952. Table 1 gives comparative figures for the past six years.

TABLE 1
Manuscripts Submitted 1954-59

	1959	1958	1957	1956	1955	1954
Manuscripts received		242 151 91	215 141 74	242 153 89	245 149 96	231 160 71
Percentage of articles accepted	14	17	19	18	17	18

Table 2 provides the breakdown of the volume's contents as between articles, review articles, communications, book reviews, etc. We have found it desirable to increase the space devoted to book reviews in 1959—in part because of improved coverage of economics books published in Soviet Russia and some of the socialist countries of Eastern Europe—and we have at the same time been successful in obtaining more short reviews, so that the number of books reviewed has substantially increased.

TABLE 2
SUMMARY OF CONTENTS 1957-59

	1959		19	58	1957		
	Number	Pages	Number	Pages	Number	Pages	
Leading articles	20 5	408 74	22 4	428 50	22 5	429 68	
Communications: Original Comments and replies Book reviews	7 16 205	46 94 345	6 12 181	30 79 327	7 6 192	55 32 344	
Classified lists: New books Periodical articles Dissertations Notes.	_ _ _	63 69 30 42	 	63 63 32 47	_ _ _	61 66 28 50	
		1,171*	•	119*		1,133*	

^{*} Plus some blank pages.

The program of obtaining reviews of some of the more important economics books published in Soviet Russia and in some of the East European socialist

countries has been carried forward with the active collaboration of specialists in the economics of these countries. Altogether fifteen reviews in this category were published in 1959, contributed by fourteen different reviewers. In most cases the latter had to obtain copies of the books reviewed, since we have not thus far been successful in obtaining review copies from these countries. Only very recently, however, we have been offered, and have a agreed to, an exchange relationship with the M. E. Saltykov-Shchedrin State Public Library in Leningrad which we hope may work out advantageously.

Included in the 1959 volume was the first of the series of eight survey articles to be published under the grant provided by the Rockefeller Foundation: "Theories of Decision-Making in Economics and Behavioral Science," by H. A. Simon; and this accounts for thirty-one pages of the increased size of the volume. The balance of the increase is essentially attributable to the expansion of the book review section.

It is anticipated that three additional survey articles will appear in the 1960 volume. One more has been assigned for completion in 1961; and the three remaining assignments will probably be made shortly. Subjects and authors are decided upon after careful consideration by the Board of Editors at their annual meetings.

Table 3 summarizes the subject-matter distribution of articles, review articles, and communications for the past five years; the figures in parentheses give the distribution for 1959 only. The most interesting distribution is that of leading articles plus original communications, since to some extent these figures indicate the areas in which the most work of publishable quality and

TABLE 3
SUBject-Matter Distribution: Articles and Communications, 1955–59 and 1959

	Articles	Review Articles	Original Communi- cations	Com- ments: Replies	Totals
General economics. Price theory. Income theory. History of economic thought Economic development. Social accounting. Economic systems. Business fluctuations. Money and banking. Public finance. International economics. Business finance. Business finance. Business organization Industrial organization. Land economics. Labor economics. Population; welfare. Unclassified.	3 (1) 3 (1) 4 7 15 (3) 2 2 5 4 (1) 8 (1)	3 (1) 4 1 3 (1) 2 (1) 2 1 (1) 2 1 (1)	3 (2) 5 1 1 (1) 1	6 (1) 11 (2) 9 (4) 1 2 7 (2) 4 3 (3) 4 (4) 2 7	11 (3) 22 (5) 35 (5) 5 28 (8) 5 (3) 5 (1) 6 (1) 12 (1) 20 (4) 21 (3) 5 (3) 2 13 (4) 8 (3) 16 (1) 2 (2) 7 (1)
•	107 (20)	• 27 (5)	30 (7)	59 (16)	223 (48)

Note: The 1955-59 figure is followed in each case by the 1959 figure in parentheses.

of broad interest to economists is being done. The six fields showing the highest concentration for the five years are as follows: Income and Employment Theory (20), Economic Development and National Economies (16), International Economics (15), Price and Allocation Theory (12), Public Finance (12), Labor Economics (9).

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Table 4 presents the expenditures in 1959 for the four regular issues of the Review in comparison with the estimated budget and with the actual expenditures in 1958. Budgeted expenditures were exceeded by about \$2,760, of which \$1,475 is covered by the grant of the Rockefeller Foundation for the survey article published. The remainder of the deficit is mainly due to an unanticipated increase in printing and mailing costs, much of which is to be accounted for by the increase in the number of copies printed of the December issue. The budget for 1959 was based on a volume of 1,370 pages, including advertising, or about 1,140 pages of text, and a printing of 14,000 copies per issue.

TICTORE AND DODGETED DATE ENDITORES									
	Budget 1959	Actual 1959	Actual 1958						
Printing and mailing Editor's salary. Editorial assistance. Legal service. Supplies. Contributors.	\$35,750 4,500 8,250 - 900 2,600	\$38,135.78* 4,500.00 8,373.88 40.00 785.04 2,923.75	\$34,517.01† 4,500.00 8,082.13 700.88 2,448.00						
	\$52,000	\$54,758,45	\$50,248,02						

TABLE 4
ACTUAL AND BUDGETED EXPENDITURES

Table 5 gives detailed information about printing cost by issues. The number of copies printed in 1958 averaged 12,975; in 1957, 12,400; in 1952, 10,900.

TABLE 5										
Copies Printed,	Size,	AND	Cost	ΟF	Printing,	1959				

	Copies	PA	AGES	Issue	Donwinto	Cost including
	Printed	Printed Net			Reprints	Reprints
March	14,000 14,000 14,000 14,500	252 282 358 280	320 328 404 344	\$ 8,667.44 8,590.10 10,727.93 9,750.00*	\$111.70 96.74 91.87 100.00*	\$ 8,779.14 8,686.84 10,819.80 9,850.00*
		1,172	1,396	\$37,735.47	\$400.31	\$38,135.78

^{*} Estimated.

The estimated costs for the coming year are presented in Table 6, based on a volume of 1,430 pages, including advertising (or about 1,150 pages of text)

^{*} Cost of December number estimated.

[†] Corrected from 1958 Report.

and an average number of copies of 14,750. Anticipated cost of survey articles is not included, since this cost will be substantially covered by the grant.

TABLE 6

RECOMMENDED BUDGET FOR 1960

Printing (including paper, postage, reprints, etc.)	\$42,000
Editor's salary	4,500
Editorial assistance	8,600
Supplies	800
Contribute	2 600
Contributors	2,600
	\$58,500

During the year I have had the advice and assistance of the following foreign correspondents—who have been particularly helpful with regard to the selection of foreign books for listing and review:

Isaac Kerstenetzky (Brazil)	Erich Schneider (Germany)
Maurice Flamant (France)	P. J. Verdoorn (Netherlands)
Paolo Sylos Labini (Italy)	Erik Lindahl (Sweden)

Three members of the Board of Editors complete their three-year terms of office at this time: N. W. Chamberlain, E. D. Domar, and T. C. Schelling. I wish to express appreciation of the generous expenditure of time they have made in the interests of the *Review* and the Association. I nominate for three-year terms beginning in 1960: M. W. Reder, T. Scitovsky, and R. Solow.

During the year I have frequently sought the aid of members of the profession in addition to the members of the Editorial Board—partly to relieve the latter of what would otherwise be an impossibly heavy burden and partly to obtain advice of specialists in particular areas not represented on the Board. The following have assisted in this way:

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M. Abramovitz	J. S. Davis	B. F. Johnston	L. Seltzer
G. Ackley	D. Durand	J. B. Lansing	E. S. Shaw
K. J. Arrow	R. Eisner	J. P. Lewis	W. L. Smith
P. Baran	W. Fellner	S. J. Maisel	R. Solow
W. J. Baumol	M. Friedman	G. M. Meier	H. W. Spiegel
A. Bergson	I. Friend	J. R. Meyer	P. O. Steiner
R. L. Bishop	A. G. Gruchy	G. Rosenbluth	W. S. Vickrey
K. F. Bode	S. Harris	W. S. Salant	B, A. Ward
K. E. Boulding	G. H. Hildebrand	T. W. Schultz	A. C. Worrell
W. M. Capron	H. S. Houthakker	I. O. Scott	
H. B. Chenery	D. G. Johnson	R. T. Selden	

Respectfully submitted,

B. F. HALEY, Managing Editor

REPORT OF THE COMMITTEE ON RESEARCH AND PUBLICATIONS

Since I reported to the Executive Committee in May, the principal event of note is the receipt of a grant to the AEA by the Ford Foundation of \$65,000 to be used over a period of approximately five years. About \$40,000 is to be used to commission surveys of foreign economic research and thinking, to publish them, and distribute them to the subscribers of the AER. The President has appointed George Hildebrand Chairman of a committee to administer this grant. The remainder of the grant will be used for a program of translation and publication of significant books in economics in foreign languages not currently available to Americans. The program will be administered by the Research and Publications Committee. The Chairman of the Committee is now collecting suggestions of books to be translated. His suggestions will be considered by the Committee during the winter and spring.

The project of the Index of Economic Periodicals is progressing well. It is anticipated that the classifying of the eighty-six journals will be completed by March 1. Editing of the slips for publication has already begun. It is hoped that the first of the volumes can be sent to the press by summer and the others soon after. After negotiations with several publishers here and abroad, the Chairman feels that the best interests of the Association will be served by having the Index published by Irwin.

I have recently been conducting a survey of the elasticity of demand for the purchase of individual copies of the Index. The results of this survey will be available when they have been summarized. It appears from preliminary review of the results that there will be a significant increase in the number of purchasers if the price can be kept down to \$10-\$12. I am not in a position at this time to indicate the size of the subsidy necessary to do this.

I regret that because I am leaving the country on the 26th of December I shall be unable to attend the meeting of the Executive Committee.

JOHN PERRY MILLER, Chairman

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REPORT OF THE COMMITTEE ON ECONOMIC EDUCATION

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1. The Association has received for use by the Committee a grant of \$25,000 from the Ford Foundation for the study of textbooks in secondary courses in American history, social problems, and economics. Professor Paul R. Olson (State University of Iowa) is in charge of the project. Working with Professor Olson are three teams of four economists, each team reviewing the most widely used texts in each of the three subject areas. The teams are composed as follows: American History—Clark Allen (Southern Illinois University), Susan Burr (Board of Governors, Federal Reserve System), Chester L. Rich (Cornell College), and Lewis E. Wagner (University of Illinois); Social Problems—Clark C. Bloom (State University of Iowa), Archibald M. McIsaac (Syracuse University), Kenneth Roose (Oberlin College), and Philip M. Taylor (University of Connecticut); and Economics—Francis M. Boddy (University of Minnesota), Lowell Harriss (Columbia University), Ward Macy (University of Oregon), and Howard Schaller (Tulane University).

Each reviewer is preparing a review of the books in his subject area. Drafts of these reviews are scheduled for completion by January 20, 1960. These drafts will be circulated within each team, and a team meeting will be held during the spring of 1960 for the preparation of a consensus review by each. Three consensus reviews—one for each of the subject areas—should be available by the fall of 1960.

These reviews are intended as a first step in giving to the profession a clear and accurate picture of that economic content entering into social studies courses in the secondary schools.

- 2. The Committee, through its Chairman (Ben W. Lewis), has continued exploration of the possibility of a co-operative study with the other social sciences of "the state of the social sciences in the secondary schools." Professor Lewis reports slow progress, but will renew his activities in this area upon his return from Jordan this spring.
- 3. Professors Clark C. Bloom and Paul R. Olson represented the Association and the Committee at the June 23-27, 1959, "Conference of the Commission on Teacher Education and Professional Standards." This was the second of three national conferences dealing with teacher education. The first (1958) conference dealt with the general purposes of teacher education. This one dealt with the content of teacher education. The next (1960) conference will deal with the incorporation of this content into teacher certification requirements.

The undersigned has maintained contact with the Commission on Teacher Education and Professional Standards and has participated in regional and state follow-up work. The Committee will continue to follow the activities of the Commission and will consider the specific formulation of its views for the consideration of the Commission.

4. The Committee has received several requests from state and local educa-

tional groups asking a recommendation of economic content for public school courses. No recommendations have been made and these requests have simply been turned over to individual economists who might be interested.

5. The Committee recommends that a session on economic education be held during the 1960 meeting of the Association. For this meeting, the following content is suggested: (1) a report on the "textbook" project by Professor Olson; (2) a paper indicating future activities suggested by the textbook study; and (3) a paper noting possible types of co-operation on the part of the Association with various national, state, and local educational groups interested in economics in the school curriculum.

Respectfully submitted,

CLARK C. BLOOM, Acting Chairman

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REPORT OF COMMITTEE ON ADDITIONAL AWARDS TO YOUNGER ECONOMISTS

At its meeting on April 4 and 5, 1958, the Executive Committee of the Association, after voting to continue the Clark awards, also voted to authorize the President to appoint an exploratory committee to inquire into the desirability of establishing other ways of recognizing the scientific achievements of younger members of the Association. This exploratory AEA Committee on Additional Awards, having investigated the distribution of the Clark awards so far made by fields of special interest of recipients, having sought the views of members of the Association's committees that have been concerned with these awards as well as the views of a sample of younger economists, and having itself considered these views and the problems that additional awards might entail, herewith submits the following report.

The distribution of the six Clark awards so far made as shown below indicates the fields of interest of the recipients.

Fields	Number of Recipients	Fields	Number of Recipients
2a Price and Allocation Theory 2b Income and Employment Theory 4a Statistical Methods 7a Monetary Theory and Policy	5 5 4 3	2c* 4b 4c 4d 6 7b and c* 13a 14d	1 1 1 1 1 1 1

^{*} One recipient indicated only Field 2 in the one case and Field 7 in the other.

This tabulation is based on fields of special interest as reported in the 1956 Handbook in the case of five of the recipients; in the case of the sixth the exploratory committee has identified the fields on the basis of the recipient's published works. It is clear there has been a definite concentration in the fields of macro and micro theory, monetary theory, and statistical methods. The following fields are not represented: 3. Economic history; economic development; national economies; 5. Economic systems; planning and reform; co-operation; 8. Public finance; fiscal policy; 9. International economics; 10. Business finance; 11. Business administration; marketing and accounting; 12. Industrial organization; government and business; industry studies; 13b. Natural resources; mining; 13c. Economic geography; 13d. Regional and urban planning; housing; 14a. Manpower and labor markets; 14b. Wages, hours, conditions of employment; 14c. Industrial benefit program; 15. Population; welfare programs; standards of living.

By way of exploring the need for an additional award or awards that would recognize the scientific achievements of younger economists in areas and aspects of the subject other than those in which the Clark awards have been concentrated the exploratory committee sent out two questionnaires. The two questionnaires were identical in wording. Copies of the two covering letters are attached hereto as Exhibits A and B [omitted here]. The first questionnaire was addressed to members and ex-members of the Committee on Honors and Awards and to members of the original exploratory committee whose 1944 and 1945 reports provided the basis for the establishment of the Walker and Clark awards. The second questionnaire was addressed to a random sample of those economists listed in the 1957 Supplement to the 1956 Handbook that were born in or after 1922. We believe this is a fairly representative sample of the younger members of the Association. And it seems clear that in assessing the needs for additional awards to younger members of the Association substantial weight should be attached to the opinions of those most directly involved.

The results of the two questionnaires so far as the first seven questions are concerned are given in the following tabulation:

RESULTS OF THE TWO QUESTIONNAIRES ON ADDITIONAL AMERICAN ECONOMIC ASSOCIATION AWARDS FOR PROFESSIONAL ACHIEVEMENT

1. Do you think the Association should establish a new series of awards to provide for recognizing professional achievements of younger members of the Association in phases of economics not so far covered by the J. B. Clark awards?

	Questionnaire
	1st 2nd
Yes	7 32
No	11 3

In answering the following questions assume that it has been decided to establish a new series of awards of some sort in addition to the Francis A. Walker and J. B. Clark awards.

2. The J. B. Clark medal is awarded biennially to "that American economist under the age of forty who is adjudged to have made the most significant contribution to economic thought and knowledge." It has been suggested that the new award might be made at intervals (see Question 6) to that younger member of the

•	Questi	onnaire	
	1st	2nd	
Yes	14	30	
No	4	4	

Association (see Question 5) who is adjudged to have made the most significant contribution to economics through an effective combination of empirical research and theoretical analysis. Would you favor making the award for a contribution of this nature?

You are urged to explain under Question 8 below the nature of the contribution you think the award should recognize, especially if your answer is no.

- 3. Various bases have been suggested for making the new awards. Indicate your preference regarding the basis of award by entering 1 in the box opposite your first choice, 2 opposite your second choice, and so on.
- a) The awards should be made to authors of books reviewed (or being reviewed) in the American Economic Review. Reviewers should be asked in each case whether they consider the books worthy of consideration and the Committee on Honors and Awards should make its selection from those reviewed books that are so recommended.

Choice 1st 2nd 3rd 4th 5th	Questi 1st 5 0 5 1	onnaire 2nd 2 5 11 8
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b) The heads of departments of economics in universities and colleges and the professional chiefs of private and public research agencies should be invited each year to nominate candidates for the new series of awards and to accompany their nominations with supporting statements and the Committee on Honors and Awards should make the awards on the basis of the supporting statements.

Questionnaire
1st 2nd
2 7
4 8
3 4
0 8
0 2

c) The open competition for places on the program of the annual meeting of the Association should be made permanent, and awards should be made to one or more of the competitors as recommended by the Committee of Judges.

	Questi	onnaire
Choice	1st	2nd
1st	1	8
2nd	2	11
3rd	3	6
4th	4	3

d) The Committee on Honors and Awards should be left free to determine the basis of the awards (as it now is in the case of the J. B. Clark awards).

Choice	Questionnaire 1st 2nd
1st	10 18
2nd	3 4
3rd	1 6
4th	0 6

e) Other.

Choice	Questionnaire 1st 2nd
1st	0 2
2nd	0 1
3rd	0 0
4th	0 1

If your answer is "Other," you are urged to explain the basis of award you would favor under Question 8 below.

4. It has been suggested that the new award take the form of a medal. Would you favor this form for the new award?

	Questionnaire
	1st 2nd
Yes	11 22
No	7 10

If your answer here is "No," you are urged to explain the form of the award you would favor under Question 8 below.

5. The J. B. Clark award is made to persons under forty. What upper age limit would you favor for the new awards?

(Questionnaire	
	1st	2nd
Various limits 30-39	2	5
40	7	20
Various limits 41-50	4	4
No limit	3	3

Note: On the first questionnaire one vote was cast for 40 assuming Plan 3d; otherwise for no limit. One vote made the limit depend on the decision under Question 2.

6. a) Do you think the new series of awards should be biennial of annual?

	Questionnaire	
	1st	2nd
Biennial	10	4
Annual	7	31
		1st Biennial 10

b) Assuming there are worthy candidates, do you think it would be advisable to make more than one award in any one year?

	Questionnaire	
	1st 2nd	
Yes	7 27	
No	10 7	

In the first questionnaire one vote under a was cast for biennial awards, if 3d were to be followed; otherwise for annual or as often as possible. One vote under b not included above was "Yes" for 3a and 3c.

- 7. Assuming it is decided to establish a new series of awards, it will apparently be necessary to choose between the two proposals outlined below. Indicate proposal you think the Association should follow by writing X in the box opposite your choice.
- a) The Alpha Kappa Psi Foundation has arranged with the American Accounting Association for a series of A. K. Psi \$100 awards, one each year beginning in 1952, and with the American Marketing Association for a somewhat parallel series of awards. Officers of the Foundation have contacted officers of the American Eco-

	Questionnaire	
	1st 2nd	
Plan a	4 18	
Plan b	9 16	

nomic Association regarding the establishment of a parallel series of awards to economists. The proposal is that the Foundation would "make an annual award of \$100 through the American Economic Association to be presented to the recipient, or used by the Association to purchase a gift for him, accompanied by a hand engrossed award certificate. This award will be made annually to the individual selected by the American Economic Association, or a committee appointed by it for the purpose, who has contributed most to economic thinking."

b) It has been proposed that the new series of awards be named after some prominent past President of the Association, preferably one whose contribution to economics was a combination of empirical research and theoretical analysis.

Note: For other replies on first questionnaire, see Exhibit C (omitted here).

Question 8 invited supplementary comments. All comments received are given in Exhibit C.

A number of those who answered Question 8 emphasize the need to encourage empirical research, including research involving field work. Several of them indicate that they have in mind research that contributes to the development of public policy. In this connection attention is called to the fact that the more arduous nature of empirical inquiries, especially inquiries involving field work, seems to make the need for their encouragement especially urgent. We think such comments constitute a very strong argument in favor of an additional award.

There appear to be two main bases for opposing the establishment of an ad-

ditional award. Some of those who voted "No" on Question 1 did so because they dislike the idea of awards as such or because they consider the difficulties in making them properly—at least to persons under forty—are insurmountable. Some, that is, would abolish the Clark award. Others fear that an additional award would be a second-class affair, or would detract from the significance of the Clark award.

Your exploratory committee has not given its attention to the first of these objections, because we understand the directive under which we are operating to preclude it. Against the second we believe should be set the concentration of the Clark awards and their neglect of fields of inquiry and slight emphasis on forms of professional economic achievement that we emphatically believe should be fairly represented in the Association's system of awards.

The suggestion has been made that, with the criticism of the past concentration of awards in mind, the Committee on Honors and Awards can be expected in future to make the Clark awards in such a manner as to provide a reasonable balance by fields and by forms of professional achievement. This exploratory committee is convinced that, even if the Clark awards were made annual, were for a time to be confined to fields not so far represented, and were to insist on substantial accomplishment in the way of empirical research as a necessary condition, it would take at least half a dozen years to establish a reasonable balance. This Committee believes much more could be done toward such a balance and that this more could be done more rapidly by the establishment of a new series of awards.

It might have been expected that the 1959 Clark award would move in the direction of providing a better balance by fields of inquiry and forms of professional accomplishment. But it seems on the whole to have continued the concentration. This Committee is convinced that the words "significant contribution to economic thought and knowledge" that attach to the Clark awards in combination with the greater ease of significant professional accomplishments of the types so far recognized by them makes it quite unlikely that reasonable balance can be achieved through the Clark awards alone, merely by calling attention to the fields of inquiry and forms of professional accomplishment that to date have been neglected or slighted.

We believe it should be quite generally agreed—perhaps by all save those who oppose awards as such—that there is urgent need to make the Association's system of awards a reasonably balanced one. On the basis of the inquiries we have made and after consideration of the various problems an additional series of awards would entail, we have concluded that the best way to move toward a balanced system would be by establishing such an additional series. We therefore so recommend.

In this connection we note the overwhelming vote in favor of this step on the second questionnaire and the somewhat divided vote on the first. We say "somewhat divided." Apparently at least two of the eleven adverse votes were votes against any system of awards for younger economists.

A considerable part of the two questionnaires was concerned with the nature of a new series of awards, if there were to be one. Both questionnaires showed some preference for having the award take the form of a medal, and we favor this plan. On both questionnaires, too, forty seems on the whole to be the pre-

ferred upper age limit, and we recommend this limit. The first questionnaire showed a slight preference for a biennial award; the second a very marked preference for an annual award. We think it would be wise to restrict the new awards to a biennial basis. This would make it possible to schedule these awards in the even-numbered years, thus staggering them and the Clark awards. We so recommend. And despite the vote on the second questionnaire, we believe it would be best to make only one award in each even-numbered year. On the seventh question we are impressed with the objections that have been raised against Proposal a. We believe it would be wise to decline the Alpha Kappa Psi offer and to name the award after a past President of the Association whose contribution was a combination of empirical research and theoretical analysis. On the question relating to the basis for making the award, both votes favored leaving the Committee on Honors and Awards free to adopt its own basis. We assume this means free, except for such vague guidance as may be given by a brief characterization comparable to the characterizations that attach to the Walker and Clark awards. We favor giving the Committee on Honors and Awards a very broad discretion of this sort.

In sum, we recommend that a new series of awards be established for the purpose of recognizing scientific achievements by younger members of the Association in forms and in fields not so far adequately covered by the Clark awards, these awards to be administered as the Clark and Walker awards now are, each award to take the form of a medal, one award to be made in each even-numbered year, and the awards to be restricted to economists under forty years of age. We believe that the award in each even-numbered year should be made to an economist concerned with the public policy implications of his work who has made an outstanding contribution through an effective combination of empirical research and theoretical analysis. We suggest that the award be called the Wesley Clair Mitchell medal.¹

Morris A. Copeland, *Chairman* James Washington Bell Harold M. Somers Joseph J. Spengler²

¹ I believe that other names should be considered before naming this award.—J. W. Bell. ² I endorse these recommendations in view of the fact that the Association has decided to continue the Clark awards. However, I should have preferred to see both the Walker and the Clark awards discontinued.

REPORT OF THE COMMITTEE ON ACADEMIC FREEDOM AND CIVIL LIBERTIES

The Committee on Academic Freedom and Civil Liberties had one complaint brought to its attention during 1959. The complaint came from an economist who failed to obtain renewal of his university appointment.

The Committee informed the complainant that the information furnished was not sufficiently specific to warrant an investigation. The Committee does not intend to duplicate the work of the American Association of University Professors, or to investigate violations of tenure rules if they were not clearly connected with an economist's freedom of speech, teaching, and writing. In this case the charge was not even a violation of tenure rules since the complainant had not yet attained tenure at his university. The Committee was unwilling to pursue charges of "arbitrary action" on the part of an administration unless the action could be interpreted as an infringement of academic freedom. No such interpretation was seen possible in this case.

The biggest issue involving academic freedom during 1959 was the "disclaimer affidavit" required of all recipients of loans and fellowships under the National Defense Education Act. It was heartening to find that a few colleges and universities immediately refused to be parties to test-oath arrangements; that others later returned funds received under such degrading conditions; that several national educational organizations expressed their strong disapproval of the provision and asked for its repeal; that the Senate Committee on Labor and Public Welfare reported to the Senate by a favorable vote the Kennedy-Clark bill to repeal the oath requirement; and that the Senate devoted two days to a debate of the bill. It was saddening that the Senate passed the repeal bill with only a 46:45 vote and then proceeded to shelve it by recommitting it to Committee by a 49:42 vote, a few senators switching their votes to oppose the repeal. It is distressing that so many politicians, administrators of colleges and universities, and even some academic scholars lack the perception and the historical knowledge to understand why oath requirements, and non-disloyalty oaths in particular, are offensive to supporters of academic freedom.

There is widespread agreement to the effect that the requirement of the non-disloyalty affidavit is "silly," "unfair," and "ineffective," but too many people, even some educated, believe that such a requirement cannot do much harm and they wonder at the fuss that is being made about it. They do not understand that it is demoralizing for a student to derive pecuniary advantages from affirming that he does not hold subversive beliefs; that it is inconsistent with the impartial search for truth to be by oath "committed" in favor of or in opposition to particular positions; that an institution of higher learning ought to refuse the admission of students who have "forsworn" any beliefs or attitudes, even if the teachers themselves have come to reject these beliefs or attitudes; that an oath should never be taken lightly and that the requirement to

sign a series of affidavits over the years cannot help reducing the respect for affirmations under oath; that loyalty to the principles of American government can never be shown by taking a loyalty oath, or a non-disloyalty oath, but only by rejecting the imposition of belief oaths.

In the last few weeks the opposition to the disclaimer-oath requirement has gained in strength: the Association of American Universities has resolved to work for the repeal of the objectionable provision and the President of the United States has spoken out against the requirement. We may now hope that an enlightened majority of the Congress will eventually remove the disclaimer-oath requirement from the law.

Respectfully submitted,

FRITZ MACHLUP, Chairman FRANCIS M. BODDY HOWARD R. BOWEN •

REPORT OF THE COMMITTEE OF JUDGES FOR THE OPEN COMPETITION

In the name of the Committee of Judges of the Open Competition in 1958 and 1959, I would like to make the suggestion that the Open Competition should be discontinued.

Our reasons for making this proposal are the following.

The Open Competition was first held in 1957, and during the three years from 1957 to 1959 both the number of participants and the quality of the papers submitted has shown a marked decline. As for the quality of the papers, this judgment results from the opinions of the members of a Screening Committee, which passed on to the Committee of Judges each year the papers it had selected as the most promising ones, as well as from the opinions of the members of the Committee of Judges, which made the final selections. The procedure was wholly anonymous in that the members of these committees knew merely the code number of each paper. Only the secretary of the committees, Professor James W. McKie, of Vanderbilt University, knew the names of the authors, and in the course of the procedure he informed the Committee of Judges only of the names of the authors who wrote the papers which the Committee had decided to place on the program. The results have become increasingly less favorable.

In 1957, thirty-three papers were submitted to the Screening Committee; by 1959 this number had declined to twelve. In 1957 the Screening Committee passed on to the Committee of Judges more than one-half of the papers submitted; in 1958 this proportion was appreciably smaller, and in 1959 only four of the twelve papers passed the first test. In 1957 the Committee of Judges selected three papers for presentation at the meetings of the Association; in 1958 two papers were selected for this purpose, and in 1959 the Committee of Judges decided not to place any of the four papers on the program.

As we see it, this experience strongly suggests that other publication outlets are available to the authors of good short papers and that authors mostly prefer these alternatives to participation in the Open Competition. Looking at the matter from the point of view of younger authors, the Open Competition does therefore not seem to perform any particularly useful function. The Association does, of course, have an interest in acquiring for the program the papers of younger authors with whose names and work the President of the Association may be unacquainted, but we are of the opinion that less formal procedures would serve this purpose better than does the Open Competition. It should, for example, be possible to get suggestions from department chairmen concerning contributions of younger economists whose work lends itself to being presented at the meetings of the Association.

Respectfully submitted,

WILLIAM J. FELLNER, Chairman

INSTITUTE OF INTERNATIONAL EDUCATION ADVISORY AND POLICY BOARD

EDITORIAL NOTE: In lieu of a formal report on the activities of the Economics Institutes for foreign students, the following summary of Professor Owen's report is submitted.

The second session of the Economics Institute was held at the University of Colorado during the summer of 1959. It was attended by forty-nine foreign graduate students of economics, representing a total of twenty-five different countries. Following the nine weeks' Institute, these students proceeded to twenty-six universities and colleges throughout the United States to begin regular programs of graduate studies.

The Economics Institute is designed to refresh and, where necessary, to supplement the member students' prior training in economics, English, and mathematics so that they may begin their graduate studies on a basis more nearly comparable to that of students whose undergraduate training has been in American universities. As such the Institute represents a pioneer experiment with a subject-matter centered orientation program for foreign students. In its experimental phase the program is being financed by the Ford Foundation.

An indication of both the precise nature of the problem to which the Institute is addressed and the effectiveness of the Institute in meeting this problem has been obtained through a comprehensive testing program developed as an integral part of the 1959 Institute. The testing program involved the administration of comparable examinations at the beginning of the Institute and at the conclusion of its eight weeks of instruction. Areas covered in the tests were economic theory, English language, the American economy, and mathematics and statistics. The economic theory examinations comprised a total of fourteen definitional and analytical questions distributed over the fields of microeconomics, macroeconomics, and monetary and banking theory. The test in elementary mathematics comprised seventeen questions based upon the contents of Part I of Gerhard Tintner's text, Mathematics and Statistics for Economists (Rinehart, 1958). This was supplemented by a test in beginning calculus and another in economic statistics, involving ten questions each, relating to Part II and Part III, respectively, of the same text. The students' familiarity with the American economy was evaluated on the basis of three essay questions directed to institutional and policy considerations. In English, standard tests prepared by the University of Michigan Language Center and the American University Language Center were used. The total testing program occupied approximately twelve hours at both the beginning and the end of the Institute.

In order to ensure a maximum degree of objectivity in the economics and mathematics testing and evaluation program, the following special procedures were adopted. First, two matching sets of questions were prepared for each examination. One-half of each set of questions was administered, in reverse order for each student, in the initial and in the final testing period. Thus the students were given different but closely comparable examinations in the two examination periods. Thereby, in addition, a correction was made possible in individual student scores for differing degrees of difficulty between the two matched sets of questions as indicated by the average scores registered for each set. Secondly, in the final examination the answers to each question in both the initial and final examinations were graded together in random order, identified only by code number. Third, for each question the answers by all students were read by a single staff member; and, finally, all grading was based on the following common scale:

8—10 points: Answer indicating student well prepared for beginning graduate work in area tested by the questions.

5—7 points: Answer indicating student marginally to well prepared for beginning graduate work in area tested by the question.

0—4 points: Answer indicating student whose preparation in area tested was deficient to marginal for beginning graduate work.

The entering status of the member students of the Institute, together with their progress recorded during the Institute, is presented in summary form in the accompanying table. The figures given indicate numbers of students falling into each category out of the total of forty-eight completing the tests.

·	Economics (Theory)	English (Aural Compre- hension)	Knowledge of American Economy	Elemen- tary Mathe- matics
At Beginning of the Institute A. Well prepared in area for graduate work B. Marginally to well prepared	2	17	1	9
for graduate work	19	18	15	12
pared in area for graduate work	27	13	32	19
At End of the Institute A. Well prepared in area for graduate work	18	28	17	27
B. Marginally to well prepared for graduate work	26	11	25	11
C. Deficient to marginally pre- pared in area for graduate work	4	9	6	2

These results clearly reinforce the judgment of the founders of the Economics Institute that foreign students commonly begin graduate work in the United States at a very considerable handicap. Especially is it evident that this handicap goes beyond the matter of language. Even though the Institute in 1959 was attended predominantly by students who had been awarded scholarships for the regular academic year, only a small minority demonstrated subject-matter background of a quality likely to carry them through an initial semester of graduate studies without academic difficulty. On the same evidence, the handicap of the beginning foreign student clearly is not to

be met merely by prior language instruction even though the latter, where it is needed, no doubt deserves highest priority. For even where language difficulties are of minimum significance, it is to be anticipated that few foreign students will be adequately prepared in subject matter to complete regular graduate degree requirements within the normal time span prescribed for American trained students. The question is, can a summer program like the Economics Institute, at the threshold of the foreign student's regular graduate program, substantially remedy the indicated deficiencies?

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The results reported in the tabulation are certainly very gratifying. The substantial record of improvement was based on an instructional program comprising the following elements:

- 1. Eight class hours per week relating to economic theory, half of which comprised general lectures and the remainder correlated discussion sections composed of five to eight student members each.
- 2. Four general lectures per week relating to the structure and performance of the American economy.
- 3. Four to ten class periods per week devoted to English instruction, varied according to the specific needs of the student.
- 4. A weekly written assignment primarily related to economic subject matter but designed equally for English instructional purposes.
- 5. One to two classes in mathematics and statistics except for a limited number of students for whom exemptions were made in this area to allow for maximum concentration on English and economics deficiencies.

The instructional program was thus both diverse and intensive. The students spent from sixteen to twenty-six hours actually in class, according to the degree of language instruction assigned to them. Clearly, the question of priority of subject matter is a very important one in the Institute, especially in the case of students demonstrating general subject-matter deficiency as well as a significant language handicap. The total capacity for substantive learning during an eight-week period of general transition to life in a new country is obviously very limited. The approach in the Economics Institute has been to give first priority to needed instruction in English, followed by instruction in economic theory, and then, where time permitted, instruction in elementary mathematics.

The Institute program has also been designed on the assumption that since this provides the framework for economic discourse in American universities, a systematic introduction of the student members to the general character of the American economy is an important complement to any conceptual learning that may be possible within the limits of time and circumstance associated with the program.

The Institute experiment also suggests quite strongly that the general orientation of beginning foreign students is facilitated when it is accomplished indirectly in association with a primary emphasis on instructon in the student's field of interest. There is no doubt that the progress indicated by the tabulations reproduced above partly reflects the success of the Institute in these terms as well as in the transmission of conceptual knowledge itself.

The senior staff of the Institute in 1959 included Professors Wyn F. Owen,

of the University of Colorado (Director), Irving Morrissett, of Purdue University, Nathan Rosenberg, of the University of Pennsylvania, and Jack Garlington, Department of English, University of Utah (Associate Director). The program is being administered by the Institute of International Education, with the guidance of a special advisory board nominated by the American Economic Association. Current members of the board are Professors Theodore Morgan, Chairman, Rendigs Fels, Carter Goodrich, D. Gale Johnson, Irving Kravis, Lorie Tarshis, and Dr. Michael Hoffman.

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The Economics Institute program is to be continued for at least one more year. The 1960 Institute will be held at the University of Colorado from June 27 to August 28 with the writer as its continuing Director. Information relating to student fellowships may be obtained from departmental chairmen and foreign student advisers.

WYN F. OWEN University of Colorado

REPORT OF REPRESENTATIVE TO THE AMERICAN COUNCIL OF LEARNED SOCIETIES

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This Council now represents, or consists of, thirty "Constituent Societies" whose members are concerned, for the most part professionally, with various branches of knowledge in the humanities and social sciences. Since five of the latter group, including the AEA, are represented on the Social Science Research Council, the ACLS concentrates somewhat on the interests of the more distinctly humanistic constituents, or on the more humanistic aspects of the social disciplines, distinguished from their more narrowly scientific aspects. It co-operates with the SSRC and with the other two large research councils all of which are joined in a "Conference Board"—in matters of concern to science and scholarship in general. This is true in particular of relations with Congress and the various administrative branches or agencies of the U.S. government. The ACLS is especially active in connection with the Library of Congress and with UNESCO, and is represented on numerous quasi-public commissions. Acting for the Department of State, the Conference Board selects senior participants in the Fulbright program. The President of the ACLS, now Dr. Frederick H. Burkhardt, serves on a number of committees and commissions promoting scientific and scholarly interests.

Since the receipt of generous grants for the purpose from the Ford Foundation and Carnegie Corporation, in addition to other resources, the ACLS has made important disbursements to individuals in support of their activities and for special projects. It annually awards ten "prizes" of \$10,000 each in recognition of distinguished work in its fields of interest. These are nominated by learned societies, institutions, or individuals, no applications being considered, and are chosen by a Selection Committee of distinguished scholars. It conducts an annual competition for fellowships, awarding about twenty each year, the amounts averaging around \$6,000; also a quarterly competition for grants-in-aid, awarding from twenty to thirty-five on each list, the amount averaging from \$1,000 to \$1,600. An annual appropriation of \$35,000 finances travel grants enabling between thirty-five and forty American scholars to attend international congresses abroad, to read papers, or perform official functions, and special grants from the Ford Foundation have increased American representation at particularly important congresses. The Council also administers a Ford Foundation grant of \$100,000 per year to the ACLS and SSRC in support of international congresses in the humanities and social sciences held in this country. Other joint activities of these two Councils support research on Asia and Latin America and Slavic studies; the Joint Committee for the last-named purpose publishes the weekly Current Digest of the Soviet Press and has completed a survey of Russian studies in this country. Joint committees of the ACLS and certain learned societies administer programs on American native languages, on recovery or preservation of archeo-. logical remains, and on personnel in its field, and miscellaneous activities.

Outstanding among its own projects are continuation and supplementation of the *Dictionary of American Biography*, revision of the *Short-Title Catalogue of English Books*, and an *Encyclopedia of Islam*, the last financed by the Rockefeller Foundation and the Arabian-American Oil Company.

The annual meeting, in January, of the Council (the delegates) and the separately organized Conference of Secretaries of the constituent societies, features a lecture by some distinguished scientist or scholar and a program of papers and discussion of some subject of interest to the learned world, for the Council and guests. Recent programs have dealt with eighteenth century thought and the present-day influence of classical antiquity; ACLS lectures have been given by H. D. F. Kitto and J. Robert Oppenheimer. For the 1960 meeting, the special program will consist of papers and discussion of the *Bible* in our present religion and culture and the lecture will be given by the Hebrew scholar and academic leader, Dr. Nelson Glueck, of Cincinnati.

Respectfully submitted,

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FRANK H. KNIGHT

REPORT OF REPRESENTATIVES TO THE SOCIAL SCIENCE RESEARCH COUNCIL

The Social Science Research Council has continued, primarily through the functioning of various committees, to be concerned with stimulating research in a number of areas of interest to economists.

The Committee on Agricultural Economics (which is jointly the Committee on Reorientations in Agricultural Economic Research of the American Farm Economic Association) has taken on renewed vigor under the chairmanship of Herman M. Southworth. During 1959, this Committee of seven agricultural economists met twice; produced (under the authorship of Southworth, Kenneth L. Bachman, and George K. Brinegar) a published report, "Reorientations in Research in Agricultural Economics"; and prepared and discussed memoranda on five important research areas—agricultural supply analysis (Bachman and Marc Nerlove), the economics of technological change in agriculture (Vernon Ruttan), the analysis of market structures (Robert Clodius and Willard F. Mueller), the role of American agriculture in the world economy (Sherwood Berg), and research methodology (Ray Bressler and Sidney Hoos). It is expected that some of these memoranda will ultimately be revised and distributed in published or processed form as a means of stimulating research in these neglected areas.

The Committee on Analysis of Economic Census Data, consisting of eight economists with John Perry Miller as chairman, has continued to be active. Among its projects which are nearing completion are studies of the location of manufacturing (Victor Fuchs) and the industrial structure of large diversified manufacturing firms (Carl Kaysen). Work is continuing on other studies of price-cost behavior (Richard Ruggles and Nancy Ruggles), industrial concentration (Ralph Nelson), and the structure of retail and wholesale trade (Richard Holton). The committee has also begun an exploration of the feasibility of appraising the validity of currently used industrial classification (James McKie).

The Committee on Economic Growth, under the able chairmanship of Simon Kuznets, has four economists among its seven members. It has continued to be extremely active. It plans to hold three conferences during 1960—one (jointly with Resources for the Future, Inc.) on natural resources and economic growth; a second (jointly with the Universities-National Bureau Committee) on the rate and direction of inventive activity; and a third on agriculture and economic growth. It was a joint sponsor with the University of Chicago of a workshop on economic anthropology in September, 1959. One of the studies of foreign economic growth supported by the committee, Japanese Capital Formation, 1868-1940, by Henry Rosovsky, will be published during the coming year.

An important new Committee on Economic Stability was created during 1959, under the chairmanship of R. A. Gordon. This Committee, which grew

out of a conference on economic stability held at the University of Michigan in June, 1959, consists of six economists. The purposes of this Committee are to facilitate co-ordination of research activities, to integrate current research methodologies, to improve the collection and publication of needed data, and to serve as a channel of communication (particularly in comparative studies of different countries) in the field of economic fluctuations.

The Committee on the Family and Economic Behavior, now under the chairmanship of James Tobin, counts several economists among its members. It is currently planning a conference of economists and sociologists which will be concerned with formulating models of the economic behavior of households and co-ordinating research centered upon the family as a unit of economic behavior. The Committee on Historical Statistics (advisory to the Bureau of the Census) has had G. Heberton Evans, Jr., as its Chairman. Under the excellent leadership of Professor Evans and the fine staff work of the Census Bureau, publication of the revised and expanded edition of Historical Statistics of the United States is expected by March, 1960. Two other projects of this Committee—statistics on recreation (Marion Clawson) and on religious affiliations (Benson Landis)—reached the publication stage during 1959.

The Committee on Population Census Monographs has been planning for a number of research projects, to be based on the 1960 census of population, which have considerable interest to economists. These projects include the following: the changing structure of metropolitan communities; the Negro in the American population since 1860; personal and family income with particular attention to problems of measuring low-income groups; changes in the American family; and an analysis of rural America and its gradual merging with the urban population. In this connection, the new Committee on Urbanization (Philip Hauser, Chairman) is also concerning itself with the study of economic as well as noneconomic aspects of the city and urban phenomena. Finally, the Committee on National Security Policy Research is administering a two-year program of grants for research on national security policy, with emphasis on economic questions. (Those interested in such grants should write Charles Hitch, RAND Corporation.)

A number of economists continued to receive assistance under the Council's various fellowship and grant-in-aid programs. Other economists served as members of the selection committees for making awards under these programs as well as of other interdisciplinary committees of the Council concerned only in part in economic matters. Joseph Spengler will continue to serve for another year as Chairman of the Council's Committee on Problems and Policy. In addition to the undersigned, R. A. Gordon and Gardner Ackley served as the representatives of the American Economic Association on the Board of Directors of the Council.

Respectfully submitted,

WILLIAM H. NICHOLLS

REPORT OF REPRESENTATIVE TO THE NATIONAL BUREAU OF ECONOMIC RESEARCH

In 1959, the National Bureau of Economic Research added thirteen titles to its list of publications. At the end of the year fifteen reports were in press; four more were approved and were being prepared for press; nine were nearing completion; and still others were in an advanced stage of preparation.

Since it may be helpful to economists to know more specifically concerning the status of various Bureau projects, they are listed below merely by title and author.

REPORTS PUBLISHED IN 1959

International Financial Transactions and Business Cycles, by Oskar Morgenstern.

The Postwar Rise of Mortgage Companies, by Saul B. Klaman.

Basic Facts on Productivity Change, by Solomon Fabricant.

The Role of Middleman Transactions in World Trade, by Robert M. Lichtenberg.

Freight Transportation in the Soviet Union: A Comparison with the United States, by Ernest W. Williams, Jr.

City Expenditures in the United States, by Harvey E. Brazer.

The Study of Economic Growth, by Solomon Fabricant (39th Annual Report).

Trade Balances during Business Cycles: U. S. and Britain since 1880, by Ilse Mintz.

The Comparative Study of Economic Growth and Structure: Suggestions on Research Objectives and Organization, by Conferences on Comparative Economic Growth and Structure.

The Demand for Money: Some Theoretical and Empirical Results, by Milton Friedman.

The Average Workweek as an Economic Indicator, by Gerhard Bry.

Consumer Expenditures, Plans, and Purchases: A Progress Report, by F. Thomas Juster.

Merger Movements in American Industry, 1895-1956, by Ralph L. Nelson.

REPORTS IN PRESS, DECEMBER 31, 1959

Changes in the Share of Wealth Held by Top Wealth-Holders, 1922-1956, by Robert J. Lampman.

Housing Issues in Economic Stabilization Policy, by Leo Grebler.

Federal Receipts and Expenditures during Business Cycles, 1879-1958, by John M. Firestone.

Capital in Transportation, Communications, and Public Utilities: Its Formation and Financing, by Melville J. Ulmer.

Postwar Market for State and Local Government Securities, by Roland I. Robinson.

The Quality and Economic Significance of Anticipations Data, by a Special Conference of the Universities-National Bureau Committee for Economic Research.

Wages and Earnings in the United States, 1860-1890, by Clarence D. Long. Wages in Germany, by Gerhard Bry.

Personal Deductions in the Federal Income Tax, by C. Harry Kahn.

Statistical Measures of Corporate Bond Financing since 1900, by W. Braddock Hickman.

Regional Cycles of Manufacturing Equipment in the United States, 1914-1953, by George Borts.

Capital in Manufacturing and Mining: Its Formation and Financing, by Daniel Creamer, Israel Borenstein, and Sergei Dobrovolsky.

Demographic and Economic Change in Developed Countries, by a Special Conference of the Universities-National Bureau Committee for Economic Research.

Public Finances: Needs, Sources and Utilization, by Special Conference of the Universities-National Bureau Committee for Economic Research.

Soviet Statistics of Physical Output of Industrial Commodities: Their Compilation and Quality, by Gregory Grossman.

REPORTS APPROVED AND SOON TO GO TO PRESS

Real Wages in Manufacturing, by Albert Rees.

Business Cycle Indicators: Contributions to the Analysis of Current Business Conditions, by Geoffrey H. Moore.

Changes in Labor Costs in Business Cycles, by Thor Hultgren.

Capital in the American Economy: Its Formation and Financing, by Simon Kuznets.

REPORTS NEARING COMPLETION

Industrial Demands upon the Money Market, 1919-1957: A Study in Fund-Flow Analysis, by Wilson F. Payne.

Trends in the American Economy in the Nineteenth Century, by Conference on Research in Income and Wealth.

World Transportation Account, 1950-53, by Herman J. Karreman.

Postwar Cycles in Manufacturers' Inventories, by Thomas M. Stanback, Jr. The National Balance Sheet and the Position of Housing in It, by Raymond W. Goldsmith with the assistance of Robert L. Lipsey.

The U.S. Savings Bond Program During the Postwar Period, by George Hanc.

The National Wealth of the United States in the Postwar Period, by Raymond W. Goldsmith.

Productivity Trends in the United States, by John W. Kendrick.

The Postwar Mortgage Market, by Saul B. Klaman.

New Studies Started in 1959

Changing Position of Philanthropy in the Economy. Plans for a study of the expansion of philanthropic activities, one of the concomitants of economic

growth in the United States, were prepared in 1958 and work was started in mid-1959. Frank G. Dickinson is in charge of the investigation. Ralph L. Nelson and others are participating in the research. An Advisory Committee of specialists from philanthropic agencies, public agencies, business corporations, and foundations has been appointed to aid in conducting the study.

Financial support for the study was provided by a grant to the National Bureau by the Russell Sage Foundation.

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Consumer Finance. Needs for a broad study of the place of consumer finance in the economy were explored late in 1958. The exploration showed that the area is one where the issues of economic growth and economic stability are joined, and that other issues of public concern are involved in the growth of consumer credit. To deal with these and other issues pertaining to consumer finance a study was started in the summer of 1959. It is designed (1) to establish the relevant basic facts; (2) to discern their implications; and (3) to do this with such thoroughness and objectivity as to command public acceptance of the validity of the findings.

The study is being conducted with the aid of grants from the sales finance companies. Robert Shay was appointed a member of the research staff to take charge of the study. F. Thomas Juster, Richard Selden, Philip Klein, and Wallace P. Mors are participating in the investigation.

International Economic Relations. With the aid of a grant from the National Science Foundation two studies were started in the area of international economic relations. One is a study of foreign trade and business cycles, undertaken by Ilse Mintz; the other is a study of postwar transactions between world areas, undertaken by Herbert B. Woolley.

Housing in the National Balance Sheet. With the aid of a grant from the Mortgage Bankers Association the postwar capital market project was extended to include an investigation of the position of housing in the national balance sheet. Raymond W. Goldsmith is in charge of the investigation and is being assisted by Robert Lipsey. The study was started early in 1959 and is expected to be completed in 1960.

Review of Price Indexes and Statistics. At the invitation of the Bureau of the Budget, the National Bureau is undertaking an examination and appraisal of the federal statistical programs dealing with prices and price indexes with a view to recommending improvements or additions that may be needed for more effective analysis. The review is being undertaken under contract with the Bureau of the Budget and with an appropriation of funds by the Bureau of the Budget. Work was started in the autumn of 1959.

The review is being conducted by a Price Statistics Review Committee appointed by the National Bureau. Members of the Committee are George J. Stigler, University of Chicago, Chairman; Harry E. McAllister, National Bureau of Economic Research; Dorothy Brady, University of Pennsylvania; Edward F. Denison, Committee for Economic Development; Irving Kravis, University of Pennsylvania; Philip J. McCarthy, Cornell University; Albert Rees, University of Chicago; Richard Ruggles, Yale University; and Boris Swerling, Stanford University. The final report on the review is to be submitted to the Bureau of the Budget by October 1, 1960.

RESEARCH ASSOCIATES, 1959-60

Research associates appointed for 1959-60 and the projects on which they are working are:

Harry McAllister (State College of Washington), price statistics and business cycles.

Zvi Griliches (University of Chicago), productivity and technological change.

Universities-National Bureau Committee for Economic Research

The eleventh Special Conference under the sponsorship of the Universities-National Bureau Committee for Economic Research was held in April, 1959, at the University of Virginia. It was devoted to state and local government finance.

The 1959 Annual Meeting of the Conference on Research in Income and Wealth was held in November, 1959, at Atlantic City. It was devoted to "An Appraisal of the Flow-of-Funds Approach."

DIRECTORS, OFFICERS, AND STAFF

At the 1959 Annual Meeting Gabriel Hauge was elected a Director at Large of the Board of Directors. Willis J. Winn was elected a Director by Appointment of the University of Pennsylvania to fill the unexpired term caused by the death of C. Arthur Kulp.

Gerhard Bry, Philip Cagan, Frank G. Dickinson, James S. Earley, F. Thomas Juster, C. Harry Kahn, Ralph L. Nelson, Richard T. Selden, and Robert P. Shay were appointed members of the research staff.

FINANCES

A long-term grant from the Ford Foundation in mid-1959 greatly aided the National Bureau's finances. The grant is for general support and assures the National Bureau of more continuing aid for its general program than had been available. The grant, however, does not make unnecessary continuing and increased support from contributions and subscriptions, and from still other sources.

Respectfully submitted,

WILLARD L. THORP

REPORT OF REPRESENTATIVE TO THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

During the year the American Association for the Advancement of Science has undertaken a major overhaul of its organization, a principal feature of which has been the setting up of a number of special committees to study and report on matters of particular concern. It is hoped in this manner to channel the energies of the membership and of Council representatives more effectively than is possible when operating directly through a Council of the present unwieldy but necessary size. Incident to this reorganization, the recommendation was adopted that the term of Council members be three years, in order to assure reasonable continuity in the membership of the Council as a whole, although the actual term is under the ultimate control of the affiliated societies. As the Council meetings are usually scheduled three days apart and during the Christmas holidays when the AEA is having its own annual meetings, often at some distance, it is difficult for a Council member to function as such and also to participate in the AEA meetings, and it would therefore seem appropriate that the AEA should make a practice of rotating this distinction and obligation at the suggested three-year intervals.

The AAAS has been concerned with the problem of maintaining some kind of order and minimizing the conflicts in the variegated program of its annual meeting and has adopted the device of designating certain blocks of time during the meetings as periods wholly under the control of the Committee on AAAS Meetings. About half of the sessions, on the other hand, are left free for the constituent societies to schedule meetings in as they see fit. It is hard for a newcomer to tell whether this has resulted in any pronounced improvement in the AAAS meeting schedule, but it might be a scheme to be considered in planning the over-all program of groups meeting concurrently with the AEA.

During the year economics has been well represented among the longer articles in *Science*, the weekly publication of the AAAS: A. G. Papandreou, "Explanation and Prediction in Economics" (April 24,1959, pages 1096-1100); G. W. Nutter, "Soviet Industrial Growth" (July 31, 1959, pages 252-55); A. A. Alchian and R. A. Kessel, "Redistribution of Wealth through Inflation" (September 4, 1959, pages 535-39); P. T. Bauer and B. S. Yamey, "Underdeveloped Economies" (November 20, 1959, pages 1383-87). There has also been a considerable, though uneven, coverage of economics among the book reviews. The shorter reports, however, are largely taken up with experimental minutiae and have been used but little if at all for the reporting of developments in economics.

Respectfully submitted,

WILLIAM VICKREY

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1960

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"T	hird Series" of the publications, at quarterly intervals. Price per volume, \$4.00.	
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